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THE MEANING OF TIME IN THE ANCIENT WORLD

> "What is time then? If no one asks me, I know: but if I were desirous to explain it to one who should ask me, plainly I know not."
>
> (St. Augustine, *Confessiones* XI, 14.)

A SURVEY of the history of ancient philosophy soon divulges a great variety of statements or definitions concerning the nature and meaning of time. These statements range all the way from mere guesses, intuitive postulates, and phantastic imagery to precise conceptual definitions and metaphysical or teleological determination of the movement and direction of time. All of these statements, however, with a very few exceptions, are merely the accidental by-products of the different major physical or metaphysical systems and doctrines proposed by the various thinkers of antiquity; and it is impossible to reduce them to any one single source or to any one single philosophical meaning or interest.

In a rather mystic and mythological manner and through the medium of allegoric or metaphoric imagery, the early theogonic, cosmogonic, and Orphic literature of the Greeks [1] had

[1] Homer, Hesiod (compare Herodotus II, 53), Theognis, Musaeus, Epimedes, Acusilaus, Pherecides, Epicharmus, to mention only the more promi-

already touched upon such problems as beginning, becoming, enduring, and ceasing; problems, that is, which imply the element of time. Thus Pherecides of Syrus, who merely revamped some of the more primitive cosmogonic ideas of his predecessors, declares *Cronos*[2] together with Zeus and *χθὼν* (or *χθωνία*—Earth) as that which has always been.[3] If, as Hermias tries to prove, Pherecides' *Cronos* is actually identical with *χρόνος*, that is to say, time *in abstracto* or total time, then we might conclude that Pherecides considers time as being one of the first efficient causes of the universe which are, at once, eternal.[4] Likewise does another orphic cosmogony found in Damascius[5] make it quite obvious that *Cronos* is merely personified abstract time. Hence the mythological tale that *Cronos* had devoured his own children[6] but signifies that "Father Time," who had already been termed "sharp-toothed" by Simonides[7] and "*edax rerum*,"[8] devours whatever he has created.

From the time of Pherecydes, Heracleitus of Ephesus, and the Pythagoreans much thought has been given to the problem of time not only by philosophers but also by poets.[9] Thus Pindar, Sophocles, and Euripides often personify time in a significant

nent. Compare, in general, Diels, H., *Die Fragmente der Vorsokratiker*, 4th edit., appendix I, II, III, chap. 163-217.

[2] Hermias, in: *Irris.* XII, identifies *Cronos* with *χρόνος* (Time); see also Probas, *Ad Virgel. Ecl.* VI, 3; Plutarch, *De Iside et Osiride* 32.

[3] Diogenes Laertius I, 119; Damascius, *De Princ.* 384.

[4] That such an ancient thinker as Pherecides should include *abstract time* among the first efficient causes seems rather incredible, particularly in view of the fact that he also credits *Cronos* with many a concrete deed. If *Cronos* is actually identical with *χρόνος*, that is, time absolute as contrasted by the *αἰὼν*, time relative (compare *Anthol. Pal.* IX, 51), then we might suggest that *Cronos* is merely the personification of the fact that everything happens "in time."

[5] Damascius, *De Princ.* 381. Compare also Athenagoras, *Supplicatio* 15.

[6] Compare Fulgentius, *Mitol.* I, 2 (p. 18, edit. Helm): "Filios vero comisse fertur quod omne tempus, quodcumque gignat, consumit."

[7] Stobaeus, *Eclogues* I, 22. Compare frag. 19 (p. 1123 Bgk.); Simplicius *Comment. in Arist. Phys.* (edit. Diels), 754, 8 ff.

[8] Ovid, *Metamorphosis* XV, 234.

[9] Wilamowitz-Moellendorf, K., *Herakles*, 2d edit., vol. II, p. 174.

manner. Pindar calls it "the father of everything," [10] while Simonides of Ceos speaks of the "tooth" of time,[11] and Euripides mentions "the foot of time." [12] Since all these purely mythological or metaphorical allusions to time are, however, but the product of poetic fancy and imagination rather than the result of scientific inquiry or exact definition, their actual philosophical content is quite unimportant.

The impact of all these visionary poetic ideas about the nature of time is still to be felt in some of the views proposed by certain Pre-Socratic thinkers. Anaximander, for instance, who like all Milesean philosophers attaches himself to the fanciful language of the cosmogonic poets, claims that according to the eternal and unchangeable order of time (*κατὰ τὴν τοῦ χρόνου τάξιν*) any individual existence and with it the whole cosmic process of becoming or evolution in itself constitutes an act of injustice, a "wrong" (*ἀδικία*), or to be more exact, a "fall" from and, hence, a "sin" against the original immutable and unchangeable oneness. This "fall," according to an irredeemable law, must be atoned for, in that everything which exists will in time have to "pay a penalty to whatever survives, which in turn shall pay the same penalty to all future being and becoming." [13] For "time has ordained to everything its becoming, being, and ceasing." [14] In other words, Anaximander is fully aware that all individual existance is determined by time and by the laws of time. Obviously, then, time is not only the pattern in which the process of individual becoming and ceasing takes place, but also that order which effectively partakes of this process, as well as the very impulse which seems to enforce the vital rythm.

[10] *Ol.* II, 17 Bgk.: *ὁ πάντων πατὴρ.*

[11] Frag. 176.

[12] Frag. 43 N. Compare also Sophocles, *El.* 179; *Oidip.* A, 1213; *Ajax* 646.

[13] Diels, H., *op. cit.*, appendix II, 9; Simplicius, *Comment. in Arist. Phys.* 24, 18. This is probably the first instance where definite value determinations are applied to natural philosophy.

[14] Hippolytus, *Philosophumena* (or, *Refutatio Omnium Haeresium*) I, 6, 1.

Hippolytus[15] furthermore informs us that Anaximander had taught the strict determination and limitation of the time alotted to individual becoming, duration, and ceasing of the various succeeding worlds or world-periods.

Anaximenes,[16] Heracleitus of Ephesus,[17] Diogenes of Apollonia,[18] and others, again, insist on the eternality of motion as well as on the never-ceasing interplay of a cyclic destruction and regeneration of infinite, co-existing or succeeding worlds or world periods. All these rythmic cycles of everlasting becoming and ceasing are, however, not so much a "becoming in time," but rather what might be called a static system of different stratifications of being. Hence, and this is particularly true with Heracleitus, the order of events is constant only in so far as it is understood in terms of eternally recurrent and successive circuits. Thus Heracleitus avers that the universe as a whole is involved in perpetual cyclic revolutions,[19] all of which are accomplished in accordance with definite and strictly determined relations. These revolutions always remain the same,[20] being, as it were, the only things which abide.[21] The universe is, accordingly, at every moment a unity divided and, again, a disunity re-united.[22] In this ceaseless cycle of transition from unity to

[15] *Op. cit.* I, 6, 1. This passage might go back to Theophrastus. Because the different worlds (κόσμοι) succeed each other, each individual world (κόσμος) must have a definite duration, although the ἄπειρον, the material principle of each individual world is eternal. Compare also Cicero *De Natura Deorum* I, 10, 25: "... longis intervallis orientes occidentesque ..." This passage found in Cicero goes back to Philodemus the Epicurean.

[16] Diels, H., *op. cit.* 2, 17; 3, A 11; 3, B 2.

[17] Diels, H., *op. cit.* 12, B 30; B 31; 12, A 1; A 9; 12, B 60; 12, A 6; A 7; A 8. Compare also Plato, *Cratylus* 402 A.

[18] Simplicius, *Comment. in Arist. Phys.* 1121, 15; Diogenes Laertius IX, 57; Eusebius, *Praeparatio Evangelica* I, 8, 12; Stobaeus, *Eclogues* I, 496.

[19] Diels, H., *op. cit.* 12, B 30; B 31; 12, A 1; A 9; 12, B 60.

[20] Diels, H., *op. cit.* 12, A 6; 12, A 7; 12, A 8.

[21] Diels, H., *op. cit.* 12, A 22; 12, A 1; A 8; 12, A 15; A 10; 12, B 31; B 65; B 66.

[22] Diels, H., *op. cit.* 12, B 57; B 58; see also frag. 51.

disunity and back to unity; in this everlasting exchange of opposites [23] nothing whatsoever persists but the cycle itself.[24]

Obviously, then, the essence of the universe is without beginning or end, while its various stages are from time to time subject to radical changes which necessitate ever emerging or disappearing worlds. But since every process within the universe must be rigidly determined according to Heracleitus, the duration of the various cosmic periods or stages is likewise strictly determined: "And (the universe) is alternately born from fire and again dissolved into fire in rigidly fixed periods (*κατὰ τίνας περιόδους*) to all eternity." [25] For "time strictly determines the dissolution of everything into fire as well as its birth from fire." [26]

[23] Diels, H., *op. cit.* 12, B 88.

[24] This Heracleitean vision of ceaseless cycles of ever succeeding worlds never fully lost its attractiveness for the Ancient Mind. Only the rising tide of Christianity put a definite end to these views. Compare Origen, *Contra Celsum* IV, 68; St. Augustine, *De Civitate Dei* XII 18, XII, 21; see also Chroust, A.-H., "The Metaphysics of Time and History in Early Christian Thought," in: *The New Scholasticism*, vol. XIX (1945), no. 4, p. 322 ff.

Empedocles' cosmology, for instance, is but a quaint combination of Heracleitean and Eleatic ideas cloaked in the mythological vernacular of orphic and Pythagorean symbolism. His claim that all being and becoming —the ceaseless cyclic process (Plato, *Sophist* 242 DE; Aristotle, *Physics* 252 a 7) of union and separation (frag. 8, Diels) of the four basic elements (frag. 17; 18, Diels)—is merely the effect of the power of love (attraction) and hate (repulsion; compare frag. 17, 7; 22, 5; 109, 3; 35, 13; 17, 19; 115, 14, Diels; also Diels, H., *op. cit.* 21, A 28; A 29; A 30; A 32; A 33; A 37; A 39; Aristotle, *Metaphysics* 984 b 32; *Physics* 250 b 27 ff.; 252 a 7 ff.; 252 a 25) has been of distinct influence on the various systems of the so-called Gnostics. See Leisegang, H., *Die Gnosis* (passages cited in the index).

By identifying attraction with love (*φιλοτὴς* or *φιλία*) and repulsion with hatred (*νεῖκος*) Empedocles likewise carries definite values concepts into his philosophy of nature. Compare Aristotle, *Metaphysics* 984 b 32.

[25] Diogenes Laertius IX, 8. Compare Simplicius, *op. cit.* 24, 4.

[26] Eusebius, *Praep. Evang.* XIV, 3, 6.—Sextus Empiricus (in: *Adv. Math.* X, 216 ff.) makes the following astounding remark concerning Heracleitus' definition of time: "Thus Aenesidemus, who in this follows Heracleitus, opined that time is something corporeal (compare also *ibid.* X, 223; X,

Since all these cosmogonic theories of ceaselessly succeeding cycles, however, seem to deprive the universe and its evolution or devolution of a particular and definite aim or purpose, the problem of time itself likewise remains without any deeper significance. Nevertheless, this rather curious neglect to incorporate a distinct time notion into their cosmologies did not prevent the Pre-Socratic thinkers from insisting upon perennial change, motion, and succession in time.[27] Somewhat an excep-

233); for it does not differ from the existent and first corporeal thing. Hence, too, when he mentions in his "*First Introduction*" that the simple appellations . . . apply to six things, he asserts that the terms "time" and "unit" are applied to the substance which is corporeal, whereas the extent of the times . . . (is) nothing else than the substance; while "day" and "month" . . . are multiples of the "now," that is, of time . . ."

It is not entirely clear from this passage whether Aenesidemus actually quotes from Heracleitus, or whether he merely thinks that he is following in the footsteps of Heracleitus when he, Aenesidemus, claims the corporeality of time. In any event, this passage would make it appear that Heracleitus seems to have insisted on the corporeality of time, although we cannot substantiate this in view of the fact that we lack additional evidence. That this passage from Sextus primarily deals with Aenesidemus' notion of the essence of time and not with that of Heracleitus is quite obvious. Although we know nothing of Aenesidemus' "*First Introduction*" (*πρώτη εἰσαγωγή*) except the title, there can be little doubt that such a title does not fit Heracleitus. Neither is it possible that Heracleitus should have made use of a definitely Stoic vernacular when he discusses the problem of what parts of the language (*μέρη τοῦ λόγου*) correspond to the "things" (*πράγματα*). For such grammatical subtleties are definitely Stoic (Chrysippus — compare Sextus Empiricus, *Adv. Math.* III, 14; II, 227; Diogenes Laertius VII, 58). — Further down (*Adv. Math.* X, 230; X, 231; X, 233) Sextus Empiricus no longer mentions Heracleitus, but the Heracleiteans, as having maintained that time is something corporeal.

From Aenesidemus' grammatical or semantic proof of the corporeality of time (*Adv. Math.* X, 216 ff.; for the refutation of the corporeality of time, see *ibid.* X, 230 ff.) we may gather the following: Aenesidemus considers time to be corporeal, not because Heracleitus might have said so, but because this corporeality, according to Aenesidemus, follows from the basic tenets of the Heracleitean cosmology to which Aenesidemus adheres. As to the latter's views on time, see *infra*.

If this interpretation of *Adv. Math.* X, 216 ff. should prove to be correct, then the statement that time is something corporeal can no longer be ascribed to Heracleitus.

[27] As a noteworthy exception we might quote the so-called Eleatics, par-

tion to these doctrines of aimless cyclic being, becoming, or ceasing are the statements of Anaxagoras whose all determining and moving νοῦς or "rational motive matter" [28] strives for a harmonious and purposive world order.[29] This emphasis upon purposiveness and meaningfulness in the universe is undoubtedly a Heracleitean motive; and the conclusions drawn from those orderly and purposive movements to a single intelligent efficient cause acting according to definite ends is in the history of philosophy the first known instance [30] of a teleological interpretation of the universe.[31] In such a purposive and orderly evolving universe time, although not specifically mentioned by Anaxagoras,[32] acquires a specific meaning, the more so, since Anaxagoras points out that the cosmic process is a single and continuous event which, under the benign guidance of the "rational motive matter," takes place once for all. For now the

ticularly Parmenides who for predominantly "logical" reasons denies non-being and, hence, becoming or ceasing as the transition from non-being into being, *viz.*, from being into non-being; and who repudiates the notion of movement and, therefore, that of time. Compare frag. 8, 1 ff.; 8, 42 ff. (Diels); see also frag. 1, 28 ff.; 4, 3 ff.; 7, 1; 8, 34 ff.; 6, 1 ff. (Diels); Plato, *Parmenides* 140 B ff.

[28] Frag. 12 (Diels); Aristotle, *Physics* 250 b 25 ff.

[29] Diogenes Laertius II, 6; Diels, H., *op. cit.* 46, A 1; A 6; Aristotle, *Physics* 250 b 24.

[30] Diogenes of Apollonia also endows the first principle and substance with "reason" (νόησις). Compare Diels, H., *op. cit.* 51, B 8; B 5.

[31] Compare Plato, *Phaido* 97 B; 98 B; Diels, H., *op. cit.* 46, A 47; see also Plato, *The Laws* 967 BC; Aristotle, *Metaphysics* 984 b 15; *Physics* 252, 10 ff.

[32] According to Anaxagoras the original "stuff" (atoms) or cosmic matter as well as the first rational "motive matter" (νοῦς) are without beginning and end and, hence, timeless. Nevertheless, the universe as such has a definite beginning in time. Thus the world began in time as did motion or, perhaps, time began together with the world and with motion. See Aristotle, *Physics* 250 b 24 ff.: "For if we are to say (meaning Anaxagoras, note by the present author) that, while there are on the one hand things that are moveable, and on the other hand things that are motive, then there is a time when there is a first movement and a first moved; and another time when there is no such thing but only something that is at rest . . ."

universe must have a definite beginning, which is but a beginning in "time." Time, then, existed always.[33]

The first more definite attempt to deal with the problem of time as such was made by the Pythagoreans. Stobaeus [34] informs us that Philolaus insisted that the universe had always been and always would be. If this report should prove reliable, and I have serious doubt that it will,[35] then Stobaeus' further remarks,[36] namely, that the Pythagorean cosmogony is actually but a metaphor of the conceptual dependence of the *causa secunda* on the *causa prima*, seems to be entirely consistent. Now Aristotle, who in this matter constitutes a more trustworthy source, states quite definitely that no one of the earlier philosophers had declared the universe as such to be without beginning, although "some" had taught that the "original stuff" or "matter" of the universe is ungenerated as contrasted with the universe which itself remains subject to ceaseless cycles of generation and destruction.[37] That by those "some" Aristotle could not have meant the Pythagoreans is more than obvious.[38]

[33] Compare Aristotle, *Physics* 251 b 14: "All . . . are in agreement . . . that (time) is uncreated . . .", that is, without beginning.

[34] Stobaeus, *Eclogues* I, 420.

[35] Aside from Stobaeus' failure to mention his specific source of information, the first few lines of this passage strongly remind us of Plato's *Timaeus* (33 A ff.; 34 B) and Ocellus Lucanus' *περὶ τοῦ πάντος γενέσιος* I, 11. — Obviously Stobaeus follows here the Neo-Pythagorean tradition. Aristotle, on the other hand, seems to contradict the statement of Stobaeus. See *De Coelo* 279 b 30 ff.

[36] *Eclogues* I, 450. Compare also Varro, *De Rerum Rustic. Libri Tres* II, 1, 3; Censorinus, *De Die Natali* IV, 3; Theophilus, *Ad Autolycum* III, 7, 26; Tertullian, *Apologeticum* 11.

[37] *De Coelo* 279 b 12 ff.; *Physics* 250 b 18 ff.

[38] See, for instance, *De Coelo* 279 b 30 ff. — It is very unlikely that the early Pythagoreans should already have distinguished between the purely conceptualistic dependence of the *causa secunda* on the *causa prima*, as, for instance Stobaeus, *op. cit.* I, 450, suggests; and between causation in the sense of a temporal origin of the *causa secunda*. Whenever the early philosophers in their various cosmogonies mention the origin of the universe they always speak of a concrete beginning or becoming in time. This

According to the Pythagoreans the universe is a sphere (σφαῖρα) [39] the outer fringe of which is encompassed by a fiery circle.[40] This fiery circle, which functions as a "shell," holds together the universe, that is, the various inner spheres.[41] Beyond this fiery circle dwells the ἄπειρον the "infinite" or the infinite πνεῦμα (air) from which the universe (κόσμος) draws its breath.[42] Out of this ἄπειρον πνεῦμα time and the "void" (κένον)—which separates individual things and thus makes it possible to distinguish the nature of things as well the various terms [43]—enter into the world.[44] Time, that is, originally the

notion was somewhat modified when certain thinkers concluded that either the original matter or "stuff" or the first "motive power" must be without beginning. While Parmenides, for instance, insists that the "world stuff" is without beginning, Heracleitus believes that the first "motive power" or principle is without beginning. But neither Parmenides nor Heracleitus infer from this the eternity of our world as such. Parmenides merely reaches the conclusion that becoming and ceasing are impossible, and that the visible and moving world is but a fallacy. Heracleitus, Empedocles, and Democritus, who teach that the first "motive power" or principle is without beginning or end, envision many succeeding worlds or world periods, each of which originates in time. Anaxagoras, who states the singleness of the world, defines his world as having originated from the original cosmic matter at a definite time. Aristotle, on the other hand, who for all intents and purposes holds to the eternity of the world, does not enter into any elaborate cosmogonic discussions. Hence we are somewhat justified in assuming that the Pythagorean doctrine concerning the origin of the world refers to a becoming in time.

[39] Compare Aristotle, *De Coelo* 293 a 20 ff., 293 18; Stobaeus, *op. cit.* I, 488.

[40] See footnote 39, *supra.*

[41] On account of the fact that the outer fiery circle holds together the universe, that is the inner spheres, it is also called a ἀνάγκη (necessity). See *Placita Philos.* I, 25, 2; Diogenes Laertius VIII, 85; Plato, *Republic* 617 B.

[42] Aristotle, *Physics* 203 a 6: "Only the Pythagoreans place the infinite among the object of the senses . . . and assert that which is outside the heaven to be infinite" (ἔξω τοῦ οὐράνου ἄπειρον); 213 b 22: "The Pythagoreans . . . held that the void (κένον) exists and that it enters the heaven itself, which inhales it from the infinite air" (ἄπειρον πνεῦμα). Stobaeus, *op. cit.* I, 380; *Placita Philos.* II, 9, 1; Simplicius, *Comment. in Arist. Physic.* 467, 15.

[43] Aristotle, *Physics* 218 a 25 ff.

[44] Stobaeus, *op. cit.* I, 380: ". . . the Pythagoreans (declared) time to

concept of *infinite* and, hence, amorphic *succession*, breaks out of the infinite void itself in order to invade the finite and orderly spheres of the word. At the same time the Pythagoreans identify time with the heavenly sphere itself.[45] Thus when they speak of time as something coming out of the infinite they probably refer to the infinititude of time; to the fact that time as such seems to be without measure, while by identifying time with the heavenly sphere they merely express the idea that the heavens or the regular movements of the celestial bodies are but the measures or "keepers" of time.[46] Hence time is not only that which encompasses the spheres,[47] but also that which enters these spheres or becomes the heavenly sphere in that it turns the heavenly bodies into celestial "time keepers"—a notion which, according to the Pythagoreans, found additional support in the fact that the heavenly bodies move according to a definite time pattern.[48] In this latter interpretation the Pythagoreans had a

be the outer sphere . . ." Compare also Aristotle, *Physics* 203 a 6; 213 b 22.

[45] *Placita Philos.* I, 21, 1: ". . . the *Py*thagoreans (declared) time to be the outer sphere . . ." — Compare also Aristotle, *Physics* 218 a 33: "Some assert that (time) is the movement of the whole, others that it is the sphere itself." By "others" Aristotle is thinking of the Pythagoreans. See also Simplicius, *op. cit.* 700, 17; 732, 23 ff.; 700, 20: "time is the interval of cosmic motion" — Archytas 785, 14; 786, 11 ff.

[46] *Ibid.*

[47] *Placita Philos.* I, 21, 1; *Historia Philos.* (erroneously ascribed to Galen) 37, 59. Compare also Diels, H., *Doxographi Graeci*, p. 619.

It seems that by this dual definition of time the Pythagoreans attempted to explain in their usual metaphoric way at once the infinitude of time in terms of infinite succession as well as the idea that by their regular circuits the heavens function as the measure or keeper of time.

[48] If the passage from *Placita Philos.* II, 5, 3 constitutes trustworthy information we would have to assume that the Pythagoreans also adhered to the notion of succeeding periodic world cycles. Compare also Stobaeus, *op. cit.* I, 452; Pseudo-Galen, *Historia Philos.* chap. 48. It appears, however, that this passage refers to the cyclic becoming or ceasing of individual things rather than that of the whole universe. See Aëtius, *Placita Philos.* II, 4, 1, who would make it appear that the Pythagoreans did not suggest a complete dissolution of the universe at any time.

Likewise has it been said that the Pythagoreans believed in exact, infinite,

definite influence upon certain ideas of Plato on time [49] as we shall see presently.

The Pythagorean Alcmaeon [50] went so far as to declare the heavens and heavenly bodies to be divine and immortal on account of their perfect and eternal movements; [51] because, as it seems, by being in eternal motion and, hence, the perfect "keepers of time" they must actually be above time in that they are always and everywhere beginning and end in one.[52] This notion which claims that eternity is "above" time and also identifies it with the perpetual coincidence of beginning and end, in other words, with everlasting, uniform, and ubiquitous presence is most interesting in so far as it throws additional light upon the meaning of time proper. Only within time are beginning and end, "before" and "after," becoming and ceasing possible as two distinct conceptions. Hence time would also function as a criterion or measure of the "before" and "after" in their relation to the "now." Eternity, on the other hand, does not permit such relational notions in that it is actually a timeless, perpetual "now." Aristotle also informs us that the Pythagorean Paron calls time "the most stupid of all things because in it we forget." [53] Thus it appears that the Pythagoreans or, at least Paron, compare time, which itself came out of the infinite emptiness, to a measureless cavern of things forgotten. Empedocles, who in this is definitely under

and ceaseless recurrences of everything that has ever transpired in time. See Simplicius, *op. cit.* 726, 26; compare also Porphyry, *Vita Pythag.* 19.

[49] See, for instance, Plato, *Timaeus* 37 C ff.

[50] In *Metaphysics* 986 a 27 ff. Aristotle points out the affinity of some of Alcmaeon's views with those held by the Pythagoreans. See also Diogenes Laertius VIII, 83; Jamblichus, *Vita Pythag.* 104.—However, it is not altogether certain whether or not Alcmaeon was a Pythagorean, or whether he merely accepted some of their teachings.

[51] Aristotle, *De Anima* 405 a 30 ff.

[52] Compare also Aristotle, *De Generatione Animalium* 916 a 33 ff.: "Alcmaeon said that (mortal) human beings . . . are incapable of joining into one beginning and end . . ."

[53] *Physics* 222 b 18. Compare also Simplicius, *op. cit.* 754, 8; 754, 14.

the influence of the Eleatics,[54] instances that the four basic elements of matter[55] are without beginning and end.[56] Likewise without beginning and end are the "motive powers" of the universe—the φιλότης (or φιλία—love) and the νεῖκος (hatred)[57]—a notion which is much akin to certain Heracleitean ideas. Since the "ratio" of these four elements in their "mixture" perpetually varies, the universe is forever subject to change, the more so, since the attracting and uniting forces of the φιλότης and the repelling and disuniting powers of the νεῖκος are not always balanced.[58] Hence at one time the elements under the prepondering influence of the νεῖκος are torn apart, while at another under the dominant influence of the φιλότης they are in perfect harmony and union.[59] This alternate predominance of either the νεῖκος or the φιλίτης, which keeps the universe in perpetual motion, lasts for an equal period of time,[60] that is, as long as it is necessary completely to unite or totally to disunite the four elements. As soon as this complete union or disunion is accomplished the predominant motive power ceases to function and the universe is at rest until for some reason the process reverses itself. In short, the cosmic process is a complete cycle composed of four distinct stages: complete union; transition from union to disunion; complete disunion; and transition from disunion to union.[61] The dura-

[54] Compare frag. 8, 34 ff.; 8, 1 ff.; 8, 42 ff. (Diels).

[55] Frag. 17, 18 (Diels): Πῦρ καὶ ὕδωρ καὶ γαῖα καὶ ἠέρος . . ." Compare also frag. 6, 2 and 6, 1 (Diels) where the four basic elements are called the roots of all things (τῶν πάντων ῥιζώματα).

[56] Frag. 8, 4 (Diels): "Beginning (φύσις) is but an anthropomorphic expression . . ." See also Aristotle, *Physics* 187 a 24.

[57] Frag. 17, 7; 22, 5; 17, 8 (Diels). Compare also Aristotle, *Metaphysics* 984 b 32.

[58] V, 110 (Stein); also V, 89 ff. (Stein); Aristotle, *Physics* 252 a 28.

[59] V, 61 ff. (Stein); compare also Plato, *Sophist* 242 D ff.; Aristotle, *Physics* 250 b 26; 252 a 6; 252 a 20 ff.; 252 a 25 ff.

[60] Aristotle, *Physics* 252 a 33.

[61] The transit from complete and, therefore, motionless union to disunion; or that from complete and equally motionless disunion to union;

tion of either complete union or complete disunion, that is to say, the two cosmic periods where there is no motion and, hence, no life, is the same as that of each of the two transitional periods where we find life and motion. In view of the scarcity of available sources [62] it is, however, impossible to ascertain what was considered to be the length of every cosmic period. Time, then, is but that rigid pattern according to which the four "cosmic seasons" supersede each other in ceaseless cycles.

"Anaxagoras . . . says that all things originally were together and at rest for an infinite period of time; and that the νοῦς introduced motion and separated them." [63] In other words: within the primaeval and amorphic original state [64] the cosmic νους—the rational motive power—suddenly created circular motion at one definite point thus initiating the beginning of an orderly universe.[65] Hence the various "elements" as well as the rational motive power, the first efficient cause, are themselves without beginning,[66] while our world as such, the articulated universe, has a definite beginning in time. It is not clear, however, whether or not the νοῦς by instigating motion also created time as did, for instance, the Demiurgus in Plato's *Timaeus* (38 B); or whether he brought about this first motion within uncreated time. In view of Aristotle's general remark that with the exception of Plato all philosophers are in agree-

are the only two cosmic periods or stages where individual existence as well as the process or becoming or ceasing are possible.

[62] In V, 369 ff. (Stein). Empedocles informs us that according to fate's inexorable resolve fallen demons are forced to wander through the universe for thirty thousand seasons (τρὶς μιν μυρίας ὥρας) before they are able to regain a state of everlasting bliss. Whether or not these thirty thousand seasons also express the length of a "cosmic year" cannot be ascertained with any degree of certainty.

[63] Aristotle, *Physics* 250 b 24 ff.

[64] Frag. 1 (Diels): "All things were originally together."

[65] Frag. 12 (Diels). Compare also Diogenes Laertius II, 6.

[66] Compare, for instance, Simplicius, *op. cit.* 163, 18; Aristotle, *Physics* 250 b 24 ff.; Plato, *Phaido* 97 B; Aristotle, *Metaphysics* 984 b 15.

ment that time is uncreated [67] we are, however, inclined to believe that the beginning of our world or, for that matter, of any world took place within time, which itself had no beginning.

Democritus likewise assumes that the infinitely many and diverse atoms are without beginning or end, as is the motive force inherent in them.[68] Thus we cannot conceive of a first cause or causes of these atoms and their specific properties.[69] Equally without beginning and end is their motion.[70] In order to stress the fact that the atoms as well as their motions have been always,[71] Democritus insists that time itself is without beginning. This might be gathered from the following passage found in Aristotle: "So far as time is concerned we see that all with one exception are in agreement in saying that time is uncreated. In fact, it is just this which enables Democritus to show that all things cannot have had a beginning. For time, he says is uncreated." [72] In his *Adversus Mathematicos* (X, 181) Sextus Empiricus tells us that Democritus the "Physicist" had called time "a day-like and night-like phantasm" (*ἡμεροειδὴς καὶ νυκτοειδὴς φάντασμα*). It is quite obvious, however, that this statement of Sextus, which lacks additional supporting evidence, is due to a scribal error. For this same passage appears several more times in Sextus [73] where it always reads:

[67] Aristotle, *Physics* 251 b 15 ff.

[68] Aristotle, *Physics* 203 a 33; Diogenes Laertius IX, 44; Stobaeus, *op. cit.* I, 414; *Placita Philos.* I, 3, 28.

[69] Aristotle, *Physics* 252 a 35.

[70] Aristotle, *Metaphysics* 1071 31: "This is why some like Leucippus (or Democritus, note by the present author) suppose eternal actuality; for they say that there is always motion." *Ibid.* 1072 a 6: ". . . those who like Leucippus (or Democritus) say that there is always motion." Aristotle, *Physics* 196 a 24; 252 a 33 ff.; Cicero, *De Finius* I, 6, 17; Hippolytus, *Refutatio* I, 13.

[71] As to the meaning of this "always," see Aristotle, *Physics* 252 a 33 ff.; "Democritus reduces the causes that explain nature to the fact that things happened in the past the same way they happen now: but he does not think fit to seek a first principle which would explain this "always."

[72] Aristotle, *Physics* 251 b 15 ff. Compare also Simplicius, *op. cit.* 701, 31.

[73] "*Pyrrhonia*" III, 137; *Adv. Math.* X, 219.

"Epicurus, according to Demetrius the Laconian (called time) . . . an accidental phenomenon or accidental phenomena concomitant with days and nights . . . ;"[74] or: "Epicurus and, according to him, Demetrius the Laconian had stated that time is an accidental phenomenon . . ."[75] In the face of this evidence we might conclude that in the above mentioned passage (X, 181) a scribe or scholiast mistook the name of Demetrius (Δημήτριος) for that of Democritus (Δημόκριτος); and that Democritus did not define our notion of time as "a day-like and night-like phantasm."

The Eleatic thinkers, particularly Parmenides, rigidly insist upon the singleness of being[76] which in its immovable, indivisible, immutable, and hence, timeless essence is without beginning and end.[77] Being, then, is all that exists in form of an absolute oneness without change of shape or place; something which is throughout indivisible, homogeneous, and without interruption.[78] It is this timeless amorphic being, this a-cosmic essence of the cosmos which Plato attacks by pointing out in form of antinomial or antithetical objections[79] the difficulties

[74] "*Pyrrhonia*" III, 137. [75] *Adv. Math.* X, 219.

[76] Frag. 4, 3 ff.; 8, 34 ff.; 7, 1; 1, 33 ff.; 6, 1 ff.; 8, 1 ff. (Diels).

[77] Frag. 8, 4 ff. (Diels): "And it (namely, being, note by the present author) was not merely once, neither will it be, since it is now everpresent as a whole and continuous being . . ."

[78] Frag. 8, 42 ff. (Diels).

[79] *Parmenides* 140 D ff.; 155 D ff.; 156 C. Compare also *Meno* 86 A. The *Parmenides* is perhaps the most difficult and problematic of Plato's dialogues. From the many possible or actually suggested interpretations and attempts at solving the "*Parmenides* problem" this much might be accepted for certain: Parmenides (the philosopher) himself admits the necessity of Ideas, and does so despite his own objections which he, however, declares to be refutable (133 B; 135 A B). But by his own admission he definitely abandons the basic Eleatic doctrine of the absolute singleness of being. This is, in my opinion, one of the main issues of the very involved Parmenidean antinomies which, as Parmenides himself concurs, destroy the validity of his own Eleatic premise. The other issue, as I see it, is the following problem, likewise discussed by the use of an antinomial argument: If the Ideas are real, but nevertheless without a definite relation to the phenomena, how, then, will we be able to conceive of their essence;

inherent in this Eleatic conception of being. These objections which proceed from the application of the logical principle of the "*tertium non datur*," [80] are launched also with reference to the time problem.

All "that is of the same age with itself or with something else must partake in the equality or likeness of time. And we have stated that the "one" (the Eleatic absolute oneness, note by the present author) did not partake either of equality or of likeness." [81] Neither as we have said, does "it partake of inequality and unlikeness." [82] "How, then, can the "one," being of this nature, be either older or younger than anything, or have the same age with it?" [83] Because if everything is really "one" and, hence, truly immovable, immutable, indivisable, and timeless singleness, it "cannot be in time at all. For must not that which is in time, be always growing older . . . and that which is older . . . always be older than something else which is younger?" [84] Since the only "different" possible is that of having become once or of becoming different, "the older is a difference relative to the younger and nothing else." [85] Nothing can "become for a longer or shorter time than itself; but it must become, and be, and have become, and be about to be, for the same time." [86]

But inasmuch as the Eleatic "one" is not supposed to partake of time, and is not in any time, that is to say, does not partake either of time past, nor time future, nor time present; in short,

their validity, and their relationship, first, to one another, secondly, to the phenomena themselves.

[80] Compare also *Sophist* 250 D: "For that which is not in motion must be at rest, and again, that which is not at rest must be in motion . . ." 252 D: ". . . because motion itself would be at rest, and rest again in motion, if they could be attributed to one another . . . which is utterly impossible."

[81] *Parmenides* 140 E.

[82] *Ibid.* 140 E.

[83] *Ibid.* 141 A.

[84] *Ibid.* 141 A.

[85] *Ibid.* 141 A. Compare also *ibid.* 153 A ff.; 153 B ff.

[86] *Ibid.* 141 B.

" if the " one " is absolutely without participation in time, it never has become or was becoming, or is, or will become, or will have become, or will be hereafter." [87] And since there are no other " modes " of partaking of being than these . . . the " one " cannot possibly partake of being " . . . and hence " is not at all." [88] From all this follows that " the " one " does not exist in such a way as to be " one " . . . it neither is nor is one." [89] And because it is not, it admits no attribute or relation and, hence, " there is no name, no expression, no perception, no opinion, no knowledge of the " one." [90]

All being, including the Eleatic " one," must partake of time [91] for " to be is but participation of being in time present; and to have been is participation of being in time past; and to be about to be is participation of being in time future." [92] " Hence the " one," since it partakes of being, partakes of time "; [93] and " time is . . . always moving forward." [94] Being, then, is becoming older, since being moves forward with time.[95] And in so doing, that is, when in the stage of becoming older, does being not " get to the point of time between the " was " and the " will be," which is the " now? " For surely in going from the past to the future it cannot skip the present." [96] For " it is the nature of that which goes on to touch both the present and the future while in the process of becoming . . . ? " [97] But when the becoming " reaches the present it . . . is then whatever it may happen to be becoming." [98] " The " one," when in the process of becoming it reaches the present, ceases to become . . . and is older than that which it was when becoming . . . ." [99] Since, however, " the present is always present with the " one " during all its being, inasmuch as whenever it is it is now, the " one " always both is and becomes . . . " [100] an absurd notion.

[87] *Ibid.* 141 B.
[88] *Ibid.* 141 D.
[89] *Ibid.* 142 A.
[90] *Ibid.* 142 A.
[91] *Ibid.* 151 E.
[92] *Ibid.* 152 A.
[93] *Ibid.* 152 A.
[94] *Ibid.* 152 A.
[95] *Ibid.* 152 A.
[96] *Ibid.* 152 B.
[97] *Ibid.* 152 C.
[98] *Ibid.* 152 C.
[99] *Ibid.* 152 C.
[100] *Ibid.* 152 E; 155 A ff.

The terms "older" and "younger," which refer to being as well as to becoming in time, are relational terms the meaning of which presupposes the concept of time.[101] The first to come into being "must be supposed to have come into being prior to others, and the others later. And the things that come into being later, are younger than that which preceded them. Thus the other things will be younger than the first, and the first will be older than the other things."[102] Hence we must also have time or, at least, a conception of time, of a single time continuity in order to distinguish between the "younger" and the "older"; between that which came into being first and that which came or comes into being afterwards; in short, between the "before" and the "after."

A thing also may be and, again, not be at different times, "for that is the only way in which it can partake and, again, not partake of being."[103] Is there not a time at which a thing that partakes of time "assumes being, and another time at which it relinquishes being—for how can it have and, again, not have the same thing unless it receives and also gives it up at some time?"[104] For this is obvious "that in the course of time . . . man either exists or does not exist."[105] Likewise "there cannot be a time in which one and the same thing at once is both neither in motion nor at rest."[106] Hence "that which is previously at rest and afterwards in motion, or previously in motion and afterwards at rest"[107] will have to experience a change: "When, then, does it change; for it cannot change either when at rest, or when in motion, or when in time?"[108] "Does this strange thing in which the thing is at the time of changing really exist—the moment (*τὸ ἐξαίφνης*)? For the moment seems to imply a something out of which changes take place into either

[101] Compare *ibid.* 153 A ff.; 153 B ff.; 141 B.
[102] *Ibid.* 153 C.
[103] *Ibid.* 155 E.
[104] *Ibid.* 156 A.
[105] *Meno* 86 A.
[106] *Parmenides* 156 B.
[107] *Ibid.* 156 C.
[108] *Ibid.* 156 C.

of two stages (*viz.*, motion or rest, note by the present author). For the change is not from the state of rest as such, nor from the state of motion as such. But there is that curious things which we call the moment lying between rest and motion, not being in any time. And into this and out of this what is in motion changes into rest, and what is at rest changes into motion." And " in changing the thing will change in a moment; and when it is changing it will be in no time . . . ." [109] In other words, the transit from motion into rest or from rest into motion is without temporal interval. Since there is no third stage aside from motion or rest; and since only motion or rest are, and, therefore, " are in time," the transit from motion to rest or from rest to motion is not " in time " and, hence, " is not " in an existential sense. Hence also the so-called " moment," this purely conceptual construction, " is not " except in the analytical mind. It is neither time nor a part of time.

Time as such is, according to Plato, something continuous and thus beyond all exact conceptual definition or actual experience. It constitutes something which in its irrationality defies all efforts of ratiocination. Only by way of abstraction and conceptual analysis might we conceive time in terms of a mere aggregate of isolated individual " moments." The total significance of time, however, always remain synonymous with absolute continuity, unity, and identity. This single time continuity or " flow of time " is always concomitant with motion and change. Should we by way of abstract reasoning merely concentrate on the " moment," on that strange thing which, being itself not in time, that is, in the single time continuity, does not really exist,[110] time actually would seem to persist and to become static, and the content of time to be at rest without motion or change. But it is impossible to have a true conception of sequence, succession, motion, or change if we operate with the non-existent static " moment," or if we call time an aggre-

[109] *Ibid.* 156 D.

[110] *Ibid.* 156 C.

gate of static "nows." Motion is but change from one state into another.[111] But change as such is impossible without time;[112] and time, particularly the "before" and the "after" in their relation to the "now,"[113] again, cannot be conceived without motion and change.[214] Hence the concept of motion is always related to time, because neither time nor motion nor change can be understood independently of one another. And since there is no time without motion and change, all temporal existence is subject to motion and change.

The beginning and end of this total "time continuity" is beyond all human comprehension or conceptual understanding. Any attempt to limit or subdivide time by such artificial means as conceptual or analytical abstraction is purely arbitrary and without validity.[115] For time as such reaches into infinity, being, as it were, but the image of eternity, of the eternal and immutable.[116] Since we cannot possess sure knowledge, but merely have a vague opinion of the true nature of the original, our understanding of time is seriously limited and imperfect. Hence Plato, although he does not deny the actuality of time, essays to show that the concept of time is actually beyond man's rational powers.[117] For we cannot even fully grasp the meaning of the fact that God created time.[118]

It seems, therefore, that the Platonic concept of total continuous time might be identified with eternity proper, the more so, since Plato himself speaks of the "countless ages of the past";[119] or of the fact that "every man has had infinitely many progenitors."[120] At the same time he apparently believes that the time of man's existence on the earth is without end.

[111] *Ibid.* 162 B ff.; *Phaido* 70 E; *Theaetetus* 155 B.
[112] *Parmenides* 151 E ff.; *Timaeus* 38 A ff.
[113] As to this trichotomy, see, in paritcular, *The Laws* 896 A; 963 C.
[114] *Parmenides* 151 E; *Timaeus* 38 A ff.
[115] *Timaeus* 37 D ff.
[116] Compare *Parmenides* 152 D; *Theaetetus* 176 E.
[117] *Parmenides* 140 D ff.; 151 E ff.
[118] *Timaeus* 38 B.
[119] *Republic* 499 C.
[120] *Theaetetus* 175 A.

Thus he answers the query whether or not the high soaring ideas expounded and advocated in his *Republic* could ever fully be realized, by pointing out that in the measureless flow of time anything that is at all possible some day might very well become actual in an infinite future.[121] In addition we have to remember that Plato adheres to that general tradition of his day which taught that nothing ever becomes out of nothing; and that nothing that ever existed could ever turn into nothing. Hence the "original matter" must have been forever as was the original creative or motive power which at one point brought order and harmony into the originally amorphic "stuff." For matter and "energy" are to him without beginning and end. And, again, we are told that "mankind is coeval with total time, and is ever following, and will ever follow, the course of time; and, therefore, men are immortal . . ." [122] In this connection we should also mention the eternal pre-existence of the soul[123] in the presence of the ideas, notions, that is, which presuppose that time is without beginning or, to put it differently, always is and always has been.

In the *Timaeus*, however, he definitely repudiates the notion that time is without beginning,[124] that is, ungenerated by pointing out in form of a magnificent allegory that God Himself had created time together with the universe: "Time, then, and the heavens came into being at the same instant in order that, having being created together, if there was ever to be a dissolution of them, they might be dissolved together. It (time) was framed after the pattern or original of the eternal nature, in order that it might resemble this as much as possible. For the pattern or original exists from eternity, and the created heaven has been, is,

[121] *Republic* 499 C.

[122] *The Laws* 721 C.

[123] See, for instance, *Phaido* 75 C ff.; 106 D; *Republic* 611 A; *Meno* 86 A; *Phaedrus* 245 D ff.; *The Laws* 781 E.

[124] Compare Aristotle, *Physics* 251 b 16 ff.: "Plato alone asserts the creation of time, saying that it had a becoming together with the universe . . ."

and will be, in all time. Such was the mind and thought of God when He created time." [125] And "when God the Father and Creator saw the creature . . . the created image . . . He rejoiced . . . and determined to make the copy . . . like the original . . . But to bestow the attribute (of the eternal) in its fullness upon a creature was impossible. Wherefore he resolved to have a moving image of eternity. And when He set in order the heavens, he made this image eternal but moving according to number, while eternity itself rests in unity. And this image we call time." [126]

The sun, moon, and planets "were created by Him in order to distinguish and preserve the numbers of time." [127] They are, in other words, but the celestial time-keepers [128]—our heavenly teachers of arithmetic and mathematical (geometrical) proportion and symmetry: [129] "The sight of day and night, and the

[125] *Timaeus* 38 B. Compare also Aristotle, *Physics* 251 b 16 ff., where Plato is rebuked for having taught the creation of time.

[126] *Timaeus* 37 C ff. This allegory persisted for a long time and, among others, profoundly influenced St. Augustine's notion of time. Compare also 37 D ff.: "For there were no days and nights and months and years before the heaven was created. But when He made the heaven He created them also. They are all parts of time; and the past and future are species of time, which we unconsciously but erroneously transfer to the Divine Essence. For we say that He "was," He "is," He "will be"; but the truth is that "is" alone is properly attributed to Him; and that "was' and "will be" are only to be spoken of becoming in time, for they are motions. But that which is immovable the same cannot become older or younger by time; nor is it subject at all to any of those states which affect motion and the sensible things, and of which becoming is the cause. These are the forms of time which imitates eternity and revolves according to the law of number." See also *ibid.* 47 B: ". . . the sight of day and night, and the months and the revolution of the years, have created number, and have given us a conception of time . . ." *Ibid.* 39 B; 39 D: ". . . the birth of time . . ." For a comparison read also *Genesis* 1: 1; 1: 2; 1: 8; 1: 14; 1: 16; 1: 26 ff.; 2: 4.

[127] *Timaeus* 38 C. As to the celestial orbits and the "rythm" of the heavenly bodies, see *ibid.* 36 D; 39 A ff.

[128] Compare *ibid.* 38 D: ". . . the stars . . . were necessary to the creation of time . . ."

[129] *Ibid.* 39 B ff.

months and the revolutions of the years, have created number; and have given us a conception of time . . . And God invented and gave us sight to the end that we might behold the courses of intelligence in the heavens, and apply them to the courses of our own intelligence which are akin to them." [130] It is, however, beyond all human understanding to conceive what God did "before" He created the universe and, together with the universe, time. Since, according to Plato, being and action, true existence and ever creative energy, that is, being and function are synonymous,[131] it would appear that within the Platonic system God could really not have existed before He actually created. For in view of God's infinite charity, limitless creative energy, as well as perfect knowledge of the good which to realize His own perfection always compels Him,[132] it is difficult to visualize that God could ever have dwelled in timeless eternity without exercising His infinite creative energy.

By reducing the essence of time to "number," that is, to a rational measure by means of which we might define and comprehend orderly motion,[133] the course of change, and the movements of the heavens, Plato to some extent but revives, on the one hand, certain theories advanced by the Pythagoreans, while, on the other hand, he already anticipates essential features of Aristotle's definition of time. He also seems to accept, with certain modifications, the Pythagorean notion of the "cosmic year,"—the "perfect time number." [134] But this cosmic year"

[130] *Ibid.* 47 A ff. Compare also *Republic* 529 E ff.; 530 A ff.

[131] *Sophist* 247 D; 248 C.

[132] *Timaeus* 29 E ff.

[133] *Ibid.* 30 A (quoted in note 141, *infra*). This passage would imply that before the act of creating the universe the latter moved in a disorderly fashion. Hence the Divine act of creation merely brings order into what formerly was disorder. Time, then, is related to *orderly* and harmonious motion, and not to motion as such. Or to put it differently, time originates together with order and orderly motion.

[134] *Ibid.* 39 C: ". . . the perfect number of time fulfills the perfect year when all the eight revolutions, having their relative degree of speed, are accomplished together and attain their completion at the same time . . ."

of Plato is not, as it is with Heracleitus, Empedocles, and the Pythagoreans, a metaphysical principle which in form of a "circular causality" governs the periodicity of the cyclic becoming and ceasing of individual worlds. It is merely that factor which coordinates as well as reduces to one single rational order, symmetry, and "number" the various orbits of the different celestial bodies.[135] In this manner Plato actually repudiates the idea of an absolute time and, by inference, of absolute physics. To him time, to be sure, remains connected with the immutable and orderly forms of absolute being without, however, becoming absolute itself. It is but the "relative" image of an absolute rational world.[136] Consequently, according to Plato, time must be denied to the irregular and, therefore, irrational movements of chaos.[137]

There can be little doubt that the Platonic ideas as to the origin and temporal beginning of time in their essence are overwhelmingly mythological.[138] To ascertain with any degree of definiteness the extent of the purely mythological or allegorical elements in the *Timaeus* is, however, nearly impossible. Thus it becomes a most difficult task to decide whether or not Plato actually and in all seriousness did propose a temporal beginning and gradual evolution of our world.[139] The very tenor of the

[135] It might be said that the time notion proposed in the *Timaeus* constitutes what could be called a compromise between natural philosophy and empirical astronomical observation.

[136] Compare *Republic* 530 A ff.; *Timaeus* 38 A; 38 B.

[137] *Timaeus* 38 B.

[138] It might be said that the real issue of the *Timaeus* is an attempt to assimilate certain facts of scientific experience to the basic principles of Platonic metaphysics.

[139] Even the closest and most loyal disciples of Plato vastly differed in their opinion as to the real meaning and significance of the *Timaeus*. Compare, for instance, Aristotle, *De Coelo* 280 a 20; 300 b 16; *Physics* 251 b 17; *Metaphysics* 1071 b 31; 1071 b 37; *De Anima* 406 b 25 ff. (as contrasted by Aristotle, *De Generatione et Corruptione* 329 a 13). For additional information, see Aristotle, *De Coelo* 279 b 32; Simplicius, *Comment. in Arist. Phys.* 488, 15; 489, 6; 489, 9; Alexander of Aphrodisias, *Comment.*

Timaeus, and particularly his statement that " everything that becomes or is created must of necessity be created by some cause," [140] seems to demand a temporal beginning of our world. The simple acceptance of a temporal beginning of our world, on the other hand, again implies a series of rather flagrant contradictions within the *Timaeus* itself. Because if everything material must necessarily have a beginning in time, then this also ought to apply to the original " cosmic matter " or " stuff " which, according to the *Timaeus*, exists and " is " before the beginning of our world despite the fact that it is corporeal and visible.[141] We must likewise keep in mind that the term creation as found in the *Timaeus* does not signify original generation *ex nihilo*, but merely a spontaneous act of intelligent ordering, of bringing order and symmetry into the pre-existing chaos of the original " cosmic stuff."

Now it is quite possible to denounce the Platonic notion of an infinite original amorphic " stuff " as something definitely pertaining to the *Timaeian mythology*. But by doing this we might as well insist that Plato's own statements concerning the temporal beginning of our world as well as that of time itself are merely metaphorical utterances designed only to express in picturesque form the metaphysical dependence of the finite on the infinite; of the temporal on the eternal; of the image on the original. For Plato's arguments in this connection seem to be concerned not so much with the problem of an absolute beginning of the universe as such, but rather with the concept of an absolute first efficient cause.[142] Should we accept, however, the notion of an absolute beginning of the universe in Plato,

in Arist. Phys. 1091 a 27; Plutarch, *De Animae Procreatione in Timaeo* III, 1; IV, 1; Philoponus, *De Aeternitate Mundi* VI, 8; VI, 21; VI, 27; VI, 31.

[140] *Timaeus* 28 B.

[141] *Ibid.* 30 A: " Wherefore finding the whole visible sphere . . . moving in an irregular and disorderly fashion . . . He brought order . . . "

[142] Compare *ibid.* 28 B.

then Plato's own insistence on the absolute beginning or creation of time together with the creation of an orderly universe [143] seems to be but the dialectical consequence of his finite cosmology and cosmogony. For then all that exists before the visible and created world, namely God, the Ideas, or the amorphic original matter [144] are not "in time"; and an "empty" time, according to the Eleatic teachings which Plato so aptly discusses in the *Parmenides*, cannot have any existence, or to put it more directly, "is not." But, again, the mere notion of something existing *before* our world was generated,—namely God, the Ideas, and the original "stuff"—in itself seems to contradict this latter view, because Plato himself admits that any "before" or "after" is possible only within time existent.[145] Moreover, the pre-existence of the human that is without beginning [146] in itself appears to preclude a temporal beginning of time and the world, for the soul is not only part of the created world, but also cannot be conceived without the body, that is, without the very thing it forms and moves. And, again, the soul, being something rational and, hence, orderly, is itself motion. And this regular motion of the soul, which is without beginning, would imply that there always was time in which it moved, for motion without time is unthinkable.

Notwithstanding all these inherent contradictions it is not permissible to say that Plato in the *Timaeus* did not take altogether too seriously his own utterances concerning the absolute beginning of time and the universe; and to insist that despite his own unequivocal statements he actually held to the temporal infinitude of our world and the eternity of time. For not without

[143] *Ibid.* 37 D; 38 C.

[144] Although in one place (*Timaeus* 30 A) Plato speaks of the irregular and disorderly motion of the universe or original amorphic matter before the creation of our world, this motion apparently is not "motion in time" on account of its lack of order and symmetry.

[145] *Ibid.* 37 E ff. Compare also *Parmenides* 156 A ff.

[146] *Meno* 86 A; *Republic* 611 A; *Phaedrus* 245 D ff.; *Phaido* 75 C ff.; 106 D; *The Laws* 781 E.

some very good evidence did Aristotle point out that among all thinkers of the past Plato alone taught that time had a definite beginning.[147] A close scrutiny of the tenor and form of the *Timaeus* will soon divulge that Plato does not essay primarily to present us with an historical account of the genesis of our world, but, above all, to formulate the idea of an efficient first cause and the dependence of the second cause upon the first cause. If however, we should take Plato's notion of the generation of time together with that of the universe literally; and, again, if we accept his statement that creation itself consists in bringing order and "measure" into chaos,[148] and in nothing else—then, and only then, the Platonic notion of time as well as the creation of time acquires a definite meaning. It is now but the "number," that is to say, the proportion, relation, or "measure" of orderly and regular motion of as many as contrasted by the previous disorderly and chaotic movements of the one original "stuff"; the intelligent "measure" of orderly becoming, being, and ceasing within a rational and orderly universe. Obviously, then, such a rational and orderly "measure" could not exist before the universe had been set in order.

From the *Timaeus* and other dialogues one might gather also that Plato in the main believes in the cyclic or spiral movement and direction of time. For he avers that "everything that has a beginning has also an end." [149] Yet he also insinuates in one instance that time moves like a pendulum swinging back and forth, in other words, that time makes something like a transition "to a cycle opposite to that in which we now live." [150] For

[147] *Physics* 251 b 16 ff.

[148] *Timaeus* 30 A.

[149] *Republic* 546 A; 529 ff. In *Republic* 499 C Plato actually seems to imply that some day, in an infinite future, the ideal State proposed by him will materialize. This would suggest, however, that time moves in a straight line.

[150] *Statesman* 270 D. This notion of pendular time motion found later renewed expression in Origen who, among others, spoke of time in terms of alternating approachment to and alienation from God.

the stars "received reversals of motion, to the end that the created heaven might imitate the eternal nature, and be as like as possible to the perfect . . ." [151] In addition we are told of a "declination of the bodies in the heavens around the earth, and (of) a great conflagration of the things upon the earth, which recurs after long intervals." [152] Great deluges and similar disasters take place from time to time,[153] thus reversing the path of progress and forcing mankind "to begin all over again like children." The gist of all these passages might be contained in Plato's basic assumption that even the apparently most perfect creation cannot endure forever, but will and must come to an end. Reviewing Plato's thoughts on time we notice that he failed to achieve an exact definition of time. In the place of such a precise definition he preferred to speak of time through the medium of magnificent allegories—of an everchanging image of unchanging eternity.

Of the more immediate disciples or followers of Plato—the so-called older Academy—only Hestiaeus of Perinthus [154] seems to have fully accepted the master's allegorical explanation of time when he avers that "time is the course (or orbit) of the heavenly bodies in their relation to one another." [155] Speusippus and Xenocrates, on the other hand, align themselves rather with Aristotle in their definition of time as "the measure within motion" (*τὸ ἓν κινήσει ποσὸν*—Speusippus); [156] or as "the

[151] *Timaeus* 39 d. [152] *Ibid.* 22 C ff. [153] *Ibid.* 23 A ff.

[154] Diogenes Laertius III, 46; Theophrastus, frag. 12; 13 (in: Schneider-Wimmer, *Theophrasti Eresii Quae Supersunt*).

[155] Stobaeus, *Eclogues* I, 250.

[156] Plutarch, *Quaestiones Platonicae* VIII, 4, 3. This definition of time is somewhat similar to that proposed by Strato of Lampsacus (see note 235, *infra*). Compare also Simplicius, *Comment. in Arist. Phys.* 788, 33 ff. It is, however, not fully clear whether Speusippus' definition of time refers to the "unit" or "number" of each individual motion, or whether it refers to the "unit" being in motion.

Speusippus insists that the *summum bonum* constitutes the end and hence, in a teleological sense, the first cause of all evolution. Thus the *summum bonum* as the *causa finalis* actually is at the end rather than at

measure of all that has become (or has been created) as well as everlasting motion" (*μετρὸν τῶν γεννητῶν καὶ κίνησιν ἀΐδιον* —Xenocrates).[157]

Aristotle's treatment of the various questions inherent in the problem of time without doubt constitutes the most exhaustive[158] and at once the most penetrating and critical treatment of this subject the ancient world was able to produce. At the outset he proposes that time could not be without change or motion,[159] because only through the different stages of motion or change within our own mind we are able to conceive of time.[160] Nevertheless, time is not one and the same with motion or change,[161] although it is "present equally and everywhere and with all things."[162] Motion and change are "inherent" in everything that moves or changes and is, therefore, at times faster or slower; time, on the other hand, is something constant: "For "fast" and "slow" are defined by time . . . but time is not defined by time . . ."[163] Hence time is something related to motion or change,[164] and yet something fundamentally different from motion and change proper.[165] It constitutes a number or

the beginning of the process of becoming (frag. 34 a ff.; 35 e, in: Mullach, A., *Fragmenta Philosophorum Graecorum*, vol. II, p. 61 ff.). This statement has a definite bearing on the significance of time and its "direction," for time is now that purposive means by which all becoming moves towards ever greater perfection, that is, towards its proper end.

[157] Stobaeus, *op. cit.* I, 250. The second definition of time as the *κίνησις ἀΐδιον* is definitely under the influence of Plato's *Timaeus*. As to Xenocrates' interpretation of the time problem in Plato's *Timaeus*, see Mullach, A., *op. cit.* frag. 54.

[158] Particularly in *Physics*, book IV, chap. 10-14 (217 b 29–224 a 16).

[159] 218 b 22. For an early criticism of Aristotle's attempt at combining time and motion, see Strato of Lampsacus (see note 230 ff., *infra*); Sextus Empiricus, "*Pyrrhonia*" III, 136 ff.; *Adv. Math.* X, 176 ff.; Plotinus, *Ennead* III, 7, 7 ff. (see note 391, *infra*).

[160] 218 b 22 ff.; 222 b 30 ff.; 235 a 11.

[161] 221 b 10: "Time is not motion . . ." 221 b 25.

[162] 218 b 12 ff.

[163] 218 b 14 ff.

[164] 219 a 1 ff.; 218 b 22 ff.; 236 b 20; 241 a 17; 251 b 11; 218 b 34.

[165] 219 a 1 ff.: "It is evident, then, that time is neither motion nor is it

measure of motion (κινήσεως ἀριθμὸς) [166] as well as the "unit value" or "number" (ἀριθμὸς) of motion as regards our distinction between the "before" and the "after." [167] "For time is what is counted and not that with which we count." [168] It is that which marks motion.[169] Because "everything that moves is in time." [170]

To be or to exist "in time" means, at least for motion or change, that something is measured or counted by time,[171] but never that this something co-exists with time.[172] Hence we may say that "all things must be contained by time [173] or occupy

independent of motion." 218 b 22: "Clearly then it (time) is not motion." 218 b 22: "But neither does time exist without change."

Galen seems to have misinterpreted Aristotle's definition of time when he ascribes to the latter the statement that time could not exist without motion. Compare Simplicius, *Comment. in Arist. Phys.* 167 a 29; 169 b 19; Themistius, *Comment. in Arist. Phys.* 45 a 18; 46 a 4.

[166] 221 b 8: "Time is the measure of motion." 221 a 1; 251 b 10.

[167] 219 a 13 ff.; *De Coelo* 279 a 14.

[168] 219 b 5 ff.; 220 b 15; 221 a 1; 221 b 7; 221 b 11; 221 b 21; 221 b 25.

In this connection we should also mention Aristotle's view that time is but the "number" or "value unit" of motion. Time, then, could not exist as a "number" without the soul, for if there would be no one to count there could not be anything that is counted and, consequently, no "number" (223 a 16 ff.). Nothing but the soul is qualified to count. Thus without the soul only motion could exist. Hence it follows that time has actually two foundations: one which is the soul—the counting agent—and one which is motion or change. Time, therefore, actually presupposes a moving (or moved) object as well as a counting intelligent subject.

[169] 220 b 16.

[170] 223 b 31; 232 b 21; 236 b 20; 239 a 20 ff.; 241 a 15.

[171] 221 a 3 ff.: "To be in time means, for motion, that both it and its essence are measured by time . . ." 221 a 8 ff.: "To be in time means one of two things: (1) to exist when time exists; (2) as we say of some things that they are "in number" . . . or that things have a number." — Things which are always (immutable and unchangeable), *viz.*, God, "are not, as such, "in time." For they are not contained by time, nor is their being or existence measured by time" (221 b 2). They are not "affected by time, which indicates that they are not in time" (221 b 5). See also 221 b 16; 221 b 21.

[172] 221 a 18 ff.: ". . . to be in time does not mean to co-exist with time . . ."

[173] 221 a 28.

time,[174] which in itself is greater than anything found in time.[175] Conversely eternity (*τὸ αἰὼν*), which "continues through its entire duration unalienably and without modification . . . ," which, in other words, "includes all time and infinitude . . . and, hence, is "based upon the fact that it is always," [176] belong to "the things which are always (and thus) are not, as such, in time; for they are not contained by time; nor is their being measured by time." [177] For "none of them is affected by time." [178] Hence Aristotle already distinguishes the infinitude of time duration from eternity proper, the latter meaning "being above time."

"We apprehend time only when we have distinct motion, distinguishing it by "before" and "after." And it is only when we have perceived this "before" and "after" that we say that time has elapsed." [179] Because only when we perceive a "before" and "after" we could state that there is time, since time is but a number (or "value unit") in regard to the "before" and "after." [180] Hence "time is the number of motion as regards the "before" and "after"; and it is continuous since it is an attribute of what is continuous." [181]

The complete identity or "coincidence" of the "number of motion" in relation to a "before" and "after" constitutes the "now" (*τὸ νῦν*),[182] while the motion of this "now" is said to

[174] 234 b 9; 237 b 23; 238 b 23 ff.

[175] 221 a 27.

[176] *De Coelo* 279 a 22 ff.; — *τὸ αἰὼν* is derived from *ἀεὶ ὄν* — to be ever.

[177] *Physics* 221 b 3 ff. Compare Simplicius *op. cit.* 737, 33.

[178] 221 b 5.

[179] 219 a 22 ff.

[180] 219 b 1 ff.

[181] 220 a 24 ff. Compare also 219 a 10 ff.; 219 b 9; 233 a 14.

[182] 219 a 30 ff.: "When . . . we perceive the "now" as one, and neither as a "before" and "after" in motion nor as an identity but in relation to a "before" and "after," no time is thought to have elapsed, because there has been no motion either. On the other hand, when we perceive a "before" and "after," then we say that there is time." See also 219 b 13 ff.; 219 b 25 ff.; 219 b 29 ff.

be time.[183] Every simultaneous time is self-identical;[184] and the "now" stands for identity."[185] Time as such "is both made continuous by the "now" and divided by it."[186] For the "now" functions as a link between the "before" and the "after," thus making time a continuous and monomial "quality."[187] At the same time this "now" by serving as a limit or boundary turns time into a multinomial "quality."[188] It is a continuous and monomial "quality" in so far as any and every "now" has always the same meaning at all times;[189] and it is a "disuniting" and multinomial "quality" because it divides time by separating the "before" and the "after" and, in doing so, becomes a different "now" with each passing "time unit."[190]

As the very factor which separates the "before" from the "after" the "now" is but a potential boundary,[191] a purely ideational "point of contact,"[192] that is, an "extremity of the past and also of the future."[193] At the same time it is an "actual (but in itself indivisible) point of division."[194] The present, then, constitutes but "an extremity of the past . . . and also of the future . . . ; it is a limit or boundary of both."[195]

[183] 219 b 33: "If there were not time, there would be no "now," and *vice versa*."

[184] 219 b 9.

[185] 219 b 10; 219 b 13 ff.: "The "now" in one sense is the same . . . its *substratum* is an identity . . ." 219 b 26 ff.: ". . . the "now" as *substratum* remains the same . . . but what is predicated of it is different . . ." Compare also 219 b 11; 219 b 31: "Thus what is called the "now" in one sense is always the same . . ."

[186] 220 a 5.

[187] 222 a 10; 220 a 26.

[188] 220 a 21; 222 a 10.

[189] 222 a 16. Compare also 231 a 29 ff.

[190] 222 a 15. See also 220 a 5 ff.; 219 b 12 ff.; 233 b 33 ff.; 234 a 17; 222 b 4.

[191] 222 a 14; 223 a 6; 234 a 3; 236 a 13; 237 a 5; 222 a 17.

[192] 231 a 30.

[193] 234 a 1 ff.

[194] 234 a 14; 222 b 1: "The "now" is an end and a beginning of time . . . the end of what is past and the beginning of what is to come . . ."

[195] 234 a 1 ff.

But this present, which is always contained by time, in itself remains something indivisible.[196] As the purely ideational point of contact between the "before" and the "after" as well as the point which divides the "before" and the "after," the "now" is in itself not time or part of time any more than an imaginary point on a continuous line could be called a real part of this same line.[197] At the same time this "now" also constitutes a "point of reference" to either a past or future event.[198] For we speak of "before" and "after" always with reference to their "distance" from the "now";[199] and this "now," again, is the boundary between the past and the future.[200] Thus the function of "now" might very well be compared with the function of an abstract single number within a continuous and infinite series of numbers, the infinite total of which stands for time—total infinite time.[201]

This definition alone should suggest the assumption of a single, infinite, and uniform "time-continuum." As a matter of fact, Aristotle insists upon the infinitude of motion, that is to say, of the sum total of all movements[202]—of motion and change without beginning or end.[203] For whatever becomes must in some way contain the element of infiniteness,[204] because everything that is in motion must either have been in motion before or have been set into motion by something that in itself is in motion or causes motion.[205] And since time is but the "measure" of motion and change, in other words, motion is

[196] 234 a 22 ff. Compare also 237 a 5: "Time is that which is intermediate between moments." 237 a 4: "The moment defines the time."

[197] 220 a 17 ff.; 220 a 21: "So far as the "now" is a boundary, it is not in time, but an attribute of it . . ."

[198] 222 a 25 ff.

[199] 223 a 5.

[200] 223 a 6.

[201] 220 a 2; 234 a 5 ff.

[202] 242 b 15.

[203] 237 a 16; 242 b 15; 242 b 33; 250 b 11 ff.; 251 b 10; 251 b 29; *Metaphysics* 1071 b 7.

[204] *Physics* 237 b 13; 234 b 16; 237 b 19.

[205] 236 b 33. Compare also 237 a 17; 237 b 12.

but movement or series of movements within a "time continuum," time itself must be likewise without beginning and end.[206] For we cannot conceive of a "time unit" which would be the absolute first[207] or the absolute last time,[208] that is, the absolute beginning or end of the one single and uniform "time continuum."[209] Thus there is always time, for the latter is uncreated:[210] "When will time fail? Surely not if motion always persists."[211] And "since the "now" is an end as well as a beginning of time, not of the same time however, but of that which is past and the beginning of that which is to come, it follows that . . . time is always at a beginning and at an end. And for this reason it seems to be always different; for the "now" is not the beginning of the same thing . . . Hence time will not fail, for it is always at a beginning."[212] Time, therefore, is infinite both in respect of its divisibility and its extremities.[213] For "the time occupied by the passage over the infinite is not a finite but an infinite time."[214]

In his conception of a single, infinite, and uniform "time continuum" Aristotle remains the faithful disciple of the Eleatic School. To be sure, he proves against Parmenides the plurality of being as well as the plurality of the successive aspects of being in its varying stages. Likewise in opposition to the Eleatic

[206] 251 b 12; *Metaphysics* 1071 b 6. As to the relation of infinite motion to infinite time, see *Physics* 237 b 23–238 b 22.

[207] "Primary time" would be an "irreducible minimum." See, for instance, 235 b 33; 236 b 23; 238 b 34 ff.; 239 a 20.

[208] 239 a 10 ff.; 238 b 32 ff.

[209] Compare, in this connection, Aristotle's views on the infinite divisibility of all quantities, including time: 227 a 10 ff.; 231 a 21 ff.; 232 a 23 ff.; 233 b 15; 233 b 32 ff.; 234 a 10; 235 a 10; 235 a 25; 237 a 10; 237 b 8; *De Generatione et Corruptione* 317 a 2 ff.; *De Coelo* 306 b 22.

[210] *Physics* 251 b 15; 251 b 22; 239 a 22.

[211] 222 a 29.

[212] 222 b 1 ff.

[213] 233 a 18 ff. Compare also 233 a 25.

[214] 233 a 29 ff.; 233 a 32 ff.; 237 b 25; 238 a 7 ff.; 238 a 20 ff.; 238 b 1ff. Compare also 233 a 28.

tradition he insists upon the reality of motion, change, and evolution.[215] But his notion of a "single time" or "flow of time" in which all motion and change take place is definitely Eleatic, for it is always one and the same always identical and everywhere at once.[216] In this fashion Aristotle became the first philosopher who through a process of abstract reasoning linked the eternity of the world to that of being: By defining time in terms of motion which in itself is eternal, in other words, by declaring time to be infinitely divisible as well as infinite in respect of its extremities[217] he was able to visualize in the "smallest time value unit" the infinitude and eternity of time. For time is something "which continues through its entire duration inalienably and without modification."[218] Time is always and, as such, cannot be in time or be contained by time. Neither it is measured by time or affected by time.[219] It is, in short the everlasting itself.

It is only natural that the so-called Peripatetics should completely adopt and conscientiously expound Aristotle's definition of time.[220] Thus Theophrastus[221] not only shares Aristotle's dogma as to an universe without beginning or end in time,[222] but defends it most vigorously and successfully against the early Stoics.[223] At the same time he also insists that mankind itself

[215] As to Aristotle's rebuke of Zeno's arguments, see *Physics* 239 b 5 ff.

[216] 220 b 5; 218 b 13; 219 b 20.

[217] 223 a 18 ff.

[218] *De Coelo* 279 a 22 ff.

[219] *Physics* 221 b 3 ff.

[220] Simplicius (in: *Comment. in Arist. Phys.* 411, 5 ff.; 412, 33 ff.; and frag. 26, in: *Comment. in Arist. Graec.*, vol. X, edit. Diels) mentions but one minor deviation of Eudemus from Aristotle in matters concerning time. Eudemus speaks of an additional kind of "motion in time," namely that of "growing older in time."

[221] As to Theophrastus' writings on physics, see Ueberweg-Heinze, edit. XII (Praechter), vol. I, p. 401 ff.; Brandis, C., *Aristotelis et Theophrasti Metaphysica*; Zeller, E., *Die Philosophie der Griechen*, edit. III, vol. II, part 2, p. 812, note 2.

[222] In: Brandis, C., *op. cit.* par. 26 (towards the end): "*ὅσοι δὲ τὸν οὐρανὸν ἀΐδιον . . .*" Compare also Simplicius, *op. cit.* 700, 18, where Theophrastus calls time the motion of the whole; and *ibid.* 788, 34 ff.

[223] In his *φυσικαὶ δόξαι* (Diogenes Laertius V, 48), also called *φυσικὴ*

was without beginning.[224] Likewise a staunch defender of Aristotle's theory of time against the Stoics was Dicaearchus of Messina [225] and before him Eudemus of Rhodes who, according to Brandis,[226] remained the most loyal and faithful disciple of Aristotle in all matters concerning the various problems of "physics." [227] Simplicius [228] mentions but one extremely insignificant observation which Eudemus added to Aristotle's theory of time, namely the fact that "becoming older in time" constitutes a fifth form of "motion in time." [229]

ἱστόρια (Simplicius, *op. cit.* 115, 12), *φυσικὰ* (Diogenes Laertius IX, 22; Simplicius, *De Coelo, schol. in Arist.* 510 a 42; Stobaeus, *Eclogues* I, 522), *περὶ φυσικῶν* (Diogenes Laertius V, 48), or *περὶ τῶν φυσικῶν δόξων* (Philoponus, *Adv. Proclum*).

As to Theophrastus' argument, see Bernays, C., *Theophrast über die Frömmigkeit*, chap. 23, 25. Much later Critolaus of Phasalis—also a Peripatetic — defended the same Aristotelean thesis against the Stoics. See Philo of Alexandria, *De Aeternitate Mundi* (edit. Cumont), p. 943 ff.

[224] According to Censorinus (*De Die Natali* IV, 3) Aristotle himself taught that mankind had been forever. As a matter of fact Aristotle discusses the hypothetical question how it is possible to conceive the beginning of man (762 a 28 ff.). In any event such ideas would be fully consistent with Aristotle's general views on the eternity of the world. For man is the end of nature and hence, of the world, and nature as such is without beginning.

As to the various stages or ages of human civilization proposed by Theophrastus, see Bernays, C., *op. cit.* p. 274 ff. In this Theophrastus is also completely under the influence of Aristotle. Compare, for instance, Aristotle, *Meteorologica* 339 b 27 ff.; *De Coelo* 270 b 19.

[225] Censorinus, *De Die Natali* IV, 3.

[226] Brandis, C., *Geschichte der Griechisch-Römischen Philosophie*, vol. III, p. 240.

[227] Aristotle's *Physics* had been worked over by Eudemus (and Theophrastus). In this Eudemus so painstakingly adhered to the original Aristotelean text that he is often referred to for the correct reading of Aristotle's own statements. Compare, for instance, Simplicius, *op. cit.* 85, 21; 517, 16; 522, 24; 552, 24; *et al.*

[228] See note 220, *supra*. Compare also Simplicius, *op. cit.* 700, 18; 700, 2 ff.: "the heavens are in time, not time in the heavens"; 702, 10 ff.

[229] When re-arranging Aristotle's *Physics*, however, Eudemus did not always strictly adhere to the Aristotelean model. Thus, for instance, he puts together Aristotle's discussion concerning continuity (231 a 31 ff.) with his discussion of the infinite divisibility of time and space (206 a 8 ff.). Compare Simplicius, *op. cit* 533, 14; 662, 25; 710, 33; 732, 24. For addi-

Strato of Lampsacus,[230] however, expounded in a special treatise his own views concerning the nature of time,[231] views that is, which declare the Aristotelian definition of time in terms of number or motion to be quite unsatisfactory if not erroneous. According to him, any number as such is a definite and finite; quantity; time, however, is a continuous and, hence, indefinite quantity or relation which for this very reason cannot be counted in the same manner as we count, for instance, finite and definite numbers. Time, Strato opines, eternally begins and ends, while the number always is present; and the parts of any number are "simultaneous," while the parts of time are always "in succession." Thus, if time were actually a "number," the "now" would be tantamount to numerical oneness. Likewise in contrast to Aristotle he asserts that time is reducible to indivisibles (*ἀμερὲς*).[232] He also objects to Aristotle's observation that time, as the number of the "before" and "after," merely relates to motion and not to rest too, although rest also knows of a "before" and "after."[233] If, on the other hand, Aristotle remarks that to be or "to be in time" is synonymous with "being encompassed by time," then, says Strato, eternity cannot be or "be in time," or even be related to time.[234]

Strato himself defines time as the "measure or magnitude inherent in all action or activity" (*τὸ ἐν ταῖς πράξεσι ποσὸν*),[235]

tional information see *ibid.* 700, 34 ff.; 710, 33 ff.; 717, 6 ff.; 723, 36 ff.; 754, 10; 788, 34.

[230] Also called the "Physicist."

[231] He discusses these views in his lost work *περὶ χρόνου* and, perhaps his *περὶ κινήσεως* which are also lost. Compare Diogenes Laertius V, 59 ff.; Simplicius, *op. cit.* 965, 10; Proclus, *In Platonis Timaeum Comment.* (edit. Diehl) 242 E ff.

[232] Sextus Empiricus, *Adv. Math.* X, 155.

[233] See, in general, Simplicius, *op. cit.* 789, 2 ff.

[234] Simplicius, *op. cit.* 789, 27 ff. Obviously Strato overlooks the fact that Aristotle himself had stated (*Physics* 221 b 3 ff.) that things eternal and, hence, eternity itself are not "in time" or encompassed by time; and that their being is not measured by time. But nevertheless things eternal and eternity itself exist.

[235] Simplicius, *op. cit.* 789, 34.

"the measure or magnitude of everything that is in motion and at rest" (*τὸ ἐν κινήσει καὶ ἠρεμίᾳ ποσὸν . . .*[236] *μέτρον κινήσεως καὶ μονῆς*).[237] For motion implies three things: The moving body, the space wherein the body moves, and the time during which the motion is completed.[238] "And we speak of "much time "and "little time"; and if it is a long measure (we mean) "much time," but if it is a short measure (we refer) to "little time." Because time is the (constant) magnitude or measure inherent to all these."[239] Hence time is never "faster" or "slower," but merely "more" or "less," for only action and motion, but never a (constant) magnitude may be slow or fast.[240] Likewise he distinguishes most thoroughly time itself from "being in time," or to be more exact, from that which is in time: "When we say that everything is in time (we mean) that the measure is in conformity with everything, with all that becomes and all that is."[241] And because he differentiates between time as such and that which is "in time," he would not admit that days, months, seasons, or years are parts of time. For the latter constitute definite and actual events or periods, while time itself is but the general duration or magnitude of these actual periods or events.[242] If Simplicius[243] is really trustworthy, then it would seem that Strato would actually have

[236] Stobaeus, *Eclogues* I, 250.

[237] Sextus Empiricus, "*Pyrrhonia*" III, 137; *Adv. Math.* X, 228; X, 177.

[238] Sextus Empiricus, *Adv. Math.* X, 169. Compare also X, 121; X, 140; X, 142; X, 154.

[239] Simplicius, *op. cit.* 789, 35 ff.

[240] Simplicius, *op. cit.* 790, 2 ff. This passage from Simplicius could not have been directed against Aristotle, for the latter had quite definitely said that "fast" and "slow" are "defined by time, . . . but time is not defined by time" (*Physics* 218 b 14 ff.) and, hence, cannot itself be "faster" or "slower," but must remain constant.

[241] Simplicius, *op. cit.* 790, 22 ff.

[242] Simplicius, *op. cit.* 790, 13. This latter argument might be directed, among others, against Epicurus and his followers. See note 265, *infra*.

[243] Simplicius, *op. cit.* 800, 17.

denied the reality of time altogether.[244] It seems to me, however, that Strato uses this argument much in the same dialectical or didactic manner as does Aristotle when the latter asks his listeners "whether time belongs to the class of things that exist or to that of things which do not exist?"[245] That time actually exists for Strato might definitely be gathered from his insistence upon the infinity of space, motion, and, hence, time.[246]

The Stoics in general agreed that time could not be adequately expressed in terms of corporeal being or existence,[247] because time, being the "interval" (*διάστημα*) of cosmic motion, is itself incorporeal.[248] To them time, nevertheless, is "something" (*τι*);[249] and "of the various somethings" some are corporeal, others incorporeal. And they enumerate four kinds

[244] *Ibid.*: ". . . καὶ τὰς τοῦ Στράτωνος ἀπορίας περὶ τοῦ μὴ εἶναι τὸν χρόνον . . ."

[245] *Physics* 217 b 31 ff. If, on the other hand, Sextus Empiricus (in: *Adv. Math.* X, 155) informs us that, according to Strato, time is composed of indivisible smallest parts, and that all motion in these indivisible parts does occur simultaneously and not successively,—this statement cannot be taken too literally. For in Simplicius, *op. cit.* 789, 2 ff., Strato insists that time cannot be the magnitude of motion. What Sextus Empiricus has in mind is probably Strato's (and Aristotle's) contention that the absolute "now" is indivisible.

[246] Simplicius, *op. cit.* 711, 9 ff.

[247] Diogenes Laertius VII, 141; Stobaeus, *Eclogues* I, 392; Sextus Empiricus, "*Pyrrhonia*" II, 81; III, 52; *Adv. Math.* X, 218 ff.; X, 227; VIII, 11; VII, 38; II, 224.

[248] Diogenes Laertius VII, 141. Although the Stoics consider time as being something incorporeal, they do not deny the existence of time. We remember, however, the fundamental Stoic tenet that only things corporeal have existence or being. Hence the question arises how can time exist or be if it is something incorporeal as is, for instance, *τὸ λεκτὸν* (the thought) or *ἡ ἐννόημα* (that which is present only in the mind). Compare Diogenes Laertius VII, 61; Stobaeus, *op. cit.* I, 332.

Sextus Empiricus (in: *Adv. Math.* VIII, 262) speaks of an endless battle over the reality (*ὑπάρξις*) of the *λεκτὸν*. For *τὸ λεκτὸν* also signifies the "meaning of a term," the "subjective idea which it excites" ("*Pyrrhonia*" II, 8; *Adv. Logicos* II, 12). Compare also *Adv. Math.* VIII, 258. It seems that only the late Stoics, being hard-pressed by their opponents, began to doubt the reality or self-evidence of time.

[249] In Stoic logic *τό τι* represents the highest universal *genus*.

of things incorporeal, among them . . . time. From this it follows that, in addition to supposing time to be something incorporeal, they also regard it as something conceived to be self-evident (*καθ' αὐτό τι νοούμενον*)." [250] For according to the Stoics, time is a particular species of the things incorporeal (*τῶν ἀσωμάτων εἶδος*) and as such is conceived as being self-evident." [251] Hence time had also to be defined in concrete terms in order to acquire actual significance.[252] Zeno, therefore, says that "time is simply the interval (or duration) of all motion"—or total cosmic motion (*διάστημα πάσης ἁπλῶς κινήσεως*),[253] the "interval (or duration) of motion by means of which we determine the rate of swiftness or slowness," [254] while Chrysippus, being somewhat more definite, calls it the "concomitant interval (or duration) of the cosmic motion"; [255] the general "interval (or duration) of motion which is also called the measure (*κριτήριον*) of that which is slow or fast—the duration which accompanies the motion of the universe." [256]

Thus it seems that Chrysippus accepts a dual meaning of time. His first definition which links time to the motion of the universe, merely refers to finite time, that is, to a finite world period, inasmuch as the Stoic universe in itself is finite in time.[257] His second definition, however, part of which coincides

[250] Sextus Empiricus, *Adv. Math.* X, 218.

[251] Sextus Empiricus, *Adv. Math.* X, 234. For a refutation of the Stoic standpoint, see Sextus Empiricus, *Adv. Math.* X, 238-247.

[252] Sextus Empiricus, *Adv. Math.* X, 218: ". . . (*ὁ χρόνος*) . . . *ἔτι καὶ καθ' αὐτό τι νοούμενον πρᾶγμα* . . ."

[253] Simplicius, *Comment. in Arist. Categ.* (edit. Kalbfleisch) 88 *ζ*; *schol.* 80 a 6; Plutarch, *Quaestiones Platonicae* VIII, 4, 3.

[254] Stobaeus, *Eclogues* I, 254; see also *ibid.* I, 256 ff. Compare Simplicius, *Comment. in Arist. Phys.* 796, 33 ff.

[255] Simplicius, *Comment. in Arist. Categ.* 89 *α*; *β*; *Comment in Arist. Phys.* 700, 21 ff.; Philo of Alex., *De Aeternitate Mundi* II, 220.

[256] Stobaeus, *op. cit.* I, 260. Compare also *ibid.* I, 250; I, 254; I, 258; *Placita Philos.* I, 22, 2. See, in general, Diogenes Laertius VII, 141; Sextus Empiricus, *Adv. Math.* X, 218; Arnim, H., *Stoicorum Veterum Fragmenta* II, no. 510.

[257] The Stoic universe or world originates and ceases in cyclic periods

with that proposed by Zeno, apparently goes beyond the limits of a finite universe and, hence, points towards an infinite time, particularly since he himself seems to have declared time as being infinite for the past as well as for the future.[258] Hence

through a general conflagration (ἐκπύρωσις), a dogma which definitely rejects Aristotle's or Theophrastus' views on the eternity of our world. That the Stoic ἐκπύρωσις is under the influence of Heracleitus needs no further comment. As to the controversy between the Stoics and the Aristoteleans or Peripatetics, see Zeller, E., *op. cit.* 3d edit., vol. II, part 2, p. 836 ff.

The eternally recurring periodic or cyclic destruction and renascence of the world occurs according to Fate (εἱμαρμένη or πεπρωμένη) — a notion which also has been taken from Heracleitus of Ephesus. Compare Arnim, H., *op. cit.* II, no. 625. See, however, Philo, *De Aeternitate Mundi* (edit. Cohn-Wendland) 77, VI, p. 97. It also occurs according to stated time periods. For God Who "is indestructible and ingenerable . . . at stated periods of time absorbs into Himself the whole of substance and creates it from Himself." Diogenes Laertius VII, 137.

The definition which restricted time to the motion of the universe brought Chrysippus into grave conflicts with other basic tenets of the Stoic creed. For Stoicism holds that each new world begins and ends in a general conflagration, but time apparently does not. Hence if time is actually the motion of the world, time has either always a new beginning or, if time is without beginning, our present world must likewise be without beginning. But neither of these two views seems to be acceptable to the Stoics.

As a matter of fact the Stoic Boëthus (Diogenes Laertius VII, 54; VII, 143; VII, 148; VII, 149), who must not be confounded with Boëthius, according to Philo of Alexandria (*De Aeternitate Mundi* (edit. Bernays, p. 249 ff.) uses four arguments against the ever recurring conflagration of each individual world: (a) The world conflagration would be without proper cause, because outside the world there is nothing but the void which itself cannot constitute an efficient cause; and the world as such does not contain within itself the cause of its own conflagration; (b) of the several forms of possible total destruction none really fits the world; (c) after the destruction of the world there would be left no adequate object for God's creativeness; and if God is truly the Cosmic Soul, He would also perish with the conflagration of the cosmos; (d) after the total destruction of the world through conflagration this fire would become extinguished due to the ensuing lack of fuel and, hence, could not bring about a regeneration of a new world. Compare also Simplicius, *op. cit.* 759, 18 ff.

[258] Arnim, H., *op. cit.* II, frag. 509. It is quite possible that Chrysippus' second definition of time includes the notion of eternally recurring cosmic periods or cycles and thus is not limited to just one cosmic period. In any event it appears that the Stoics seriously consider the problem of whether or not our world had a beginning in time. Compare Diogenes Laertius VII, 133.

his second definition of time obviously includes all the "before" and "after" of each individual cosmic cycle or world period; in other words, it refers to the "total time continuum" in which infinitely many successive worlds originate and vanish.[259] It may also refer to the infinite creative activity of the cosmic νοῦς which in an infinite period successively creates and obliterates infinitely many worlds. Hence the general Stoic dictum that "time past and time future are infinite (ἄπειρος), but time present is finite."[260] In addition the Stoics insist on the infinite divisibility of time.[261] The dependence of certain aspects of the Stoic definition of time on the Aristotelian model, while on the whole being much inferior to the latter, is too obvious to require additional comment.

[259] Lactantius (in: *Institutiones Divinae* VII, 12) repudiates this Stoic notion of infinitely succeeding cosmic periods.

[260] Diogenes Laertius VII, 141.

[261] Sextus Empiricus, *Adv. Math.* X, 142. Of no mean importance for a better understanding of the Stoic problem of time and its metaphysical implications is their contention that the origin of the universe is but a fusion of passive matter and active seminal reason (λόγος σπερματικὸς, Arnim, H., *op. cit.* II, no. 300 ff.; Diogenes Laertius VII, 134; Seneca, *Epistola* LXV, 2). This seminal reason, which evolves in a rational, purposive, and organic fashion within all individual being and becoming, proceeds according to universal Fate, that is, according to rational agent or cogent causal nexus which governs the whole universe (Arnim, H., *op. cit.* II, no. 915). This Fate is the Deity Himself Who co-ordinates everything and welds it into one single and all-encompassing coherence (Arnim, H., *op. cit.* II, no. 527). While the universal cosmic Fate of the Stoics seems to be but the inescapable law of causal necessity, the Stoic Providence (πρόνοια — compare Arnim, H., *op. cit.* I, no. 172, 174, 176; II, no. 1106 ff.), which is but a particular aspect of the general cosmic Fate, proclaims the working of a wise and benign divine plan throughout time and history. Viewed from these metaphysical premises the Stoic doctrine of the seminal reason constitutes, therefore, merely an elaboration of certain Aristotelean ideas in the direction of a general philosophy of history; and the Stoic dogma of a benevolent Providence, the beginning of an optimistic philosophical theodicy.

The so-called Middle Academy, particularly Carneades, attacked most viciously this theistic teleology of the Stoics (Chrysippus). See, for instance, Cicero, *De Natura Deorum* III, 25; III, 31 ff.; III, 65 ff.; III, 76; III, 79 ff.; Cicero, *Academica* II, 38; II, 120 ff.

The general Epicurean attitude towards the problem of time likewise was profoundly influenced by Aristotle without, however, attaining the poignancy and conceptual exactitude of the latter.[262] In accordance with their basic tenet that only things corporeal could be called substances and,[263] hence, have "being"; and that the different attributes of things substantial are merely contingent, Epicurus describes time as a "contingent symptom accompanying things in motion" (*σύμπτωμα τοῦτο δ' ἐστὶ παρακολούθημα κινήσεων*).[264] Epicurus himself maintains that when dealing with the problem of time "we have only to reflect that we attach the attribute of time to days and nights and their parts;[265] and likewise to feelings of pleasure and pain and to neutral states; to states of movement and states of rest, conceiving a peculiar accident (*σύπτωμα*) of these to be the very characteristic which we express by the term time."[266] Hence, Epicurus states, "we must not investigate time as we do other accidents which we investigate in a subject, namely, by referring them to the preconceptions envisioned in our minds. But we must take into account the plain fact itself, by virtue of which we speak of time as "long" and "short," linking to it in

[262] The Epicurean definition of time is essentially but a rather primitive restatement of Aristotle.

[263] Lucretius, *De Rerum Natura* I, 440; Diogenes Laertius X, 67. Sextus Empiricus (in: *Adv. Math.* VI, 66; X, 197) quotes a passage from Timon of Phlius (the "Sceptic") in which the latter argues against the reality of time.

[264] Stobaeus, *Eclogues* I, 252; Lucretius, *op. cit.* I, 449. The Greek term *σύμπτωμα* is used here as meaning something incorporeal the evidence of which cannot itself be supported through direct sensorial experience. Lucretius, *l. c.*, translates *σύμπτωμα* by "*eventus.*" For according to him time is an "event," that is, something which in itself is but the product of something else, because we are conscious of time only in connection with or as the result of our sensations of motion or rest, but never of time itself.

[265] This Epicurean notion might have been influenced by Plato, *Timaeus* 47 A: "The sight of day and night, and the months and the revolution of the years . . . have given us a conception of time." Compare also Plato, *Republic* 529 E ff.; 530 A ff.

[266] Diogenes Laertius X, 72 ff.; Stobaeus, *op. cit.* I, 252. Compare also Sextus Empiricus, *Adv. Math.* X, 216 ff.; X, 219; "*Pyrrhonia*" III, 137.

intimate connection this attribute of duration." [267] And we do "not need to predicate anything else of time, as if this something else contained the same essence as is contained in the proper meaning of the word "time." We must chiefly reflect upon that to which we attach this peculiar character (*τὸ ἴδιον*) of time, and by which we measure it.[268]

But if time, or to be more exact, our notion of what commonly is called time, is but an abstraction derived from our various sensate experiences or lack of such experiences,[269] then time itself is but a contingent or accidental product (*σύμπτωμα*) of these experiences or sensations. And since all our sensate experiences in themselves are as such but the contingent products of the world in which we live, time, then, according to Demetrius the Laconian,[270] is but "a contingent product of contingent products (*σύμπτωμα συμπτωμάτων*) paralleling days and nights and their component parts" [271] as well as "our feelings of pleasure or lack of such feelings as well as our states of motion and states of rest." [272] "Hence it is plain that Epicurus thinks that time is incorporeal, but not in the same sort of way as do the Stoics. For whereas they . . . supposed that time is an incorporeal thing conceived as being self-evident, Epicurus supposed it to be a "contingent property" of certain things." [273]

In Diogenes Laertius X, 47 we are also told that Epicurus

[267] Diogenes Laertius X, 72; Sextus Empiricus, *Adv. Math.* X, 219 ff.; X, 224 ff.; X, 240 ff.

[268] Diogenes Laertius X, 72.

[269] According to the Epicureans all pleasure is either "pleasure in motion" (*ἡ ἐν κινήσει ἡδονὴ*) or "pleasure in rest" (*ἡ καταστηματικὴ ἡδονὴ*). Compare Diogenes Laertius X, 136; Usener, H., *Epicurea*, frag. 408 ff.; 416 ff.; Cicero, *De Finibus* II, 3, 9.

[270] Diogenes Laertius X, 26; Strabo XIV, 2, 20 (p. 658); Sextus Empiricus, *Adv. Math.* VIII, 348; X, 219; "*Pyrrhonia*" III, 137.

[271] Compare also Sextus Empiricus, *Adv. Math.* X, 224: "Days and nights are symptoms of the surrounding air—as is the hour."

[272] Sextus Empiricus, *Adv. Math.* X, 219; X, 238; X, 225; "*Pyrrhonia*" III, 137.

[273] Sextus Empiricus, *Adv. Math.* X, 227.

mentions "the time magnitudes perceptible by reason alone" (*οἱ διὰ λόγου θεωρητοὶ χρόνοι*)[274] which are basically different from "time perceptible by the senses" (*αἰσθητὸς χρόνος*). Whether or not these "abstract time magnitudes" are identical with "the minimum continuous time" (*ὁ ἐλάχιστος συνεχὴς χρόνος*) mentioned in another place,[275] is not entirely clear. It seems, however, that judging from the very context in which the term "minimum continuous time" is used, that this term refers to "units of sensate time."[276] Hence the time magnitudes perceptible by reason alone" are actually immeasurably short times, the "*tempora multa, ratio quae comperit esse*,"[277] which, according to Lucretius are contained in every sensate time magnitude: "In one single time magnitude, when we are able to perceive it by our senses . . . many latent time magnitudes are contained which reason alone discovers to exist."[278]

Partly on account of the effective attacks of the so-called Sceptics and the Middle Academy (Carneades) upon certain essential features of Stoic metaphysics;[279] partly because of their closer contacts with the Roman world which displayed little or no interest in primarily abstract metaphysical speculation, the Stoics of the second and first centuries B. C. begin to abandon vital elements of their original dogma in order to accept certain borrowings from Plato and Aristotle. This form of eclecticism or syncretinism is but the result of a keenly felt need for an adjustment to and fusion with certain aspects of Platonism or Aristotelianism. In its pronounced lack of truly creative and original thought it manifests itself not only in a

[274] Compare Diogenes Laertius X, 62.

[275] Diogenes Laertius X, 62.

[276] Diogenes Laertius X, 62: ". . . the atoms . . . are travelling in one direction during the minimum continuous time . . . so short as to be appreciable by reason alone . . ." Compare also Sextus Empiricus, *Adv. Math.* X, 148 ff.

[277] Lucretius, *De Rerum Natura* IV, 792.

[278] Lucretius, *op. cit.* IV, 794 ff.

[279] See note 261, *supra*.

definite uncertainty concerning many a fundamental theoretical problem of the metaphysical type, but also develops in the direction of predominantly ethico-practical issues. Among others this eclecticism or syncretism found its expression in Panaetius who, in opposition to the ancient "orthodox" Stoic tradition and in compliance with the Aristotelian or Peripatetic teachings,[280] prefers rather to insist upon the eternity or indestructability (*ἄφθαρτον*) of our world and, hence, of time[281] without, however, being too definite or certain about this either.[282] Posidonius, on the other hand, strictly adhered to the Stoic tenet of final world conflagration and world renascence according to definitely stated time periods.[283]

Marcus Aurelius, from a predominantly ethical point of view, deals with the problem of time solely against the background of

[280] According to Cicero, *De Finibus* IV, 28, 79, Panaetius "semper habuit in ore Platonem, Aristotelem, Xenocratem, Theophrastum, Dicaearchum, ut ipsius scripta declarant."

[281] Diogenes Laertius VII, 142; Philo of Alexandria, *De Aeternitate Mundi* XV, p. 248; Epiphanius, *Contra Haereses* III, 2, 9; Stobaeus, *Eclogues* I, 414; Cicero, *De Natura Deorum* II, 45, 115; II, 46, 119. In this he seems to follow Boethius; see note 257, *supra*.

[282] It is not altogether certain whether or not Panaetius meant to say that his thesis of a possible world without end also includes the assumption of a world without beginning. The terms "deathless" and "never waxing old" (Epiphanius) applied to our world—terms which remind us of Plato's *Timaeus* 33 A—as well as the terms "immortality" or "eternity" of the world (Philo) do not necessarily imply that our world is without a beginning. Thus it is difficult to ascertain whether or not Panaetius actually replaces the Stoic doctrine of a final world conflagration with Academic or Aristotelean (Peripatetic) teachings. However, inasmuch as some members of the Academy (Xenocrates and Crantor) already had fully accepted the Aristotelean views in this matter (compare Aristotle, *De Coelo* 279 b 32 ff.—discussed in Zeller, E., *op. cit.* 4th edit., vol. II, part 1, note 1; Plutarch, *De Animae Procreatione in Timaeo* III (p. 1013); Philo of Alexandria, *De Aeternitate Mundi* IV, p. 224; Censorinus, *De Die Natali* IV, 3), it is more than probable that Panaetius follows the Peripatetic tradition, particularly in view of the fact that in this question the Aristotelians seem to be not only the main opponents of the Stoic tradition of which Panaetius apparently does not entirely approve, but Aristotelianism also its sole real alternative.

[283] Diogenes Laertius VII, 142.

man's finite existence and significance within an infinite and infinitely rational as well as eternal cosmic order.[284] "Time is like a river made up of events which happen; and a violent stream at that. For as soon as a thing has been seen, it is carried away, and another thing comes into its place; and this will be carried away too." [285] Time, then, is infinite both before and after the present.[286] Hence he speaks of "the immensity of time behind thee and . . . the time which is before thee—another infinite magnitude. In this infinity then what is the difference between him who lives three days and him who lives three generations." [287] "By contemplating the eternity of time . . . how short is the time from birth to dissolution" [288]—how boundless the abyss of time both past and future." [289] In this "limitless time before birth as well as equally boundless time after dissolution," [290] in other words, in this "universal time . . . a short and indivisible interval has been assigned to thee . . ." [291] "How small a part of the boundless and unfathomable time is assigned to every man; for it is very soon swallowed up in the eternal." [292]

Pyrrho of Elis, also called "the Sceptic," is said to have denied altogether the reality of time,[293] while the syllograph

[284] "*Thoughts*" IV, 36; V, 13; V, 23; VIII, 6; IX, 19; IX, 28.

[285] *Ibid.* IV, 43.

[286] *Ibid.* IV, 3, par. 1: ". . . the chaos of infinite time on each side (of the present, note by the present author) . . ."

[287] *Ibid.* IV, 50. The term τριγερήνιος might refer to Homer's Nestor who att he time of the Trojan war was living in hte third generation. In *Anthol. Pal.* VII, 144 Nestor is called τριγήρων.

[288] *Ibid.* IX, 32. [289] *Ibid.* XII, 7. [290] *Ibid.* IX, 32. [291] *Ibid.* V, 24.

[292] *Ibid.* X, 32. In a similar vein Boethius (*Consolatio Philosophiae* 5 defines eternity as the "nunc stans," the "interminabilis vitae tota simul et perfecta possessio." According to him "sempiternitas et aeternitas differunt. Nunc enim stans et permanens aeternitatem facit; nunc currens in tempore sempiternitatem." Eternity, therefore, is being permanently at rest and, hence, above time, while infinitude is but infinitely lasting motion in time. Hence time also enjoys "sempiternitas." Thus God alone is eternal and above time, while the world as such is only of infinite duration within infinite time.

[293] Compare Diogenes Laertius IX, 61: "Pyrrho . . . universally held that there is nothing existent . . ."

Timon of Phlius is recorded to have asserted that the present of "time present" cannot be indivisible and, therefore, cannot be at all, because "no thing that is divisible is of a nature to exist in indivisible time—becoming for example, and ceasing, and everything of a similar kind." [294] Since all things are infinitely divisible, time itself, too, would have to be infinitely divisible; which fact alone would abolish time, since "each divisible thing is measured by some part of itself, the measure coinciding with each part of the thing measured. But time cannot be measured by any part of itself. If, for instance, the present measures the past, it will coincide with the past and will therefore be the past; and similarly it will be the future in the case of the future (that is, should the present be measured by the future which is part of time). . . . Hence time is not divisible . . . and it does not exist." [295]

"Aenesidemus, who in this is under the influence of Heracleitus,[296] . . . asserts that time is something corporeal,[297] for it does not differ from the existent "being" and the first (single) body (*μὴ διαφέρειν . . . αὐτὸν τοῦ ὄντος καὶ τοῦ πρώτου σώματος*). Hence, too, when he (Aenesidemus, note by the present author) mentions in his "*First Introduction*" (*πρώτη εἰσαγωγὴ*) [298] that the simple appellations (*ἁπλᾶς λέξεις*)—which are the parts of speech—apply to six things, he states that the terms "time" and "unit" or "singleness" (*μόνας*) are applied to the substance which is corporeal, whereas the extents (or extensions) of times and the sums of the numbers are chiefly expressed by multiples of these (substances). For the "now," which is an indication of time, and also the "unit" are

[294] Sextus Empiricus, *Adv. Math.* X, 197; compare *ibid.* VI, 66.

[295] Sextus Empiricus, "*Pyrrhonia*" III, 143.

[296] As to the meaning of this passage, see note 26, *supra.*

[297] As to the arguments against time being something corporeal, see Sextus Empiricus, *Adv. Math.* X, 230-233.

[298] Of Aenesidemus' *πρώτη εἰσαγωγὴ* nothing but the title has come down to us.

nothing else than the substance; while "day" and "month" and "year" are multiples of the "now"—of time, that is to say—and "two" and "three" and "ten" and "a hundred" are multiples of the "unit." So . . . these people (Aenesidemus and Heracleitus(?), note by the present author) make time something corporeal." [299] In other words, by starting out with the notion of the original oneness and identity of the single cosmic matter or "stuff"—a notion which he apparently borrows from Heracleitus [300]—Aenesidemus insists that in the original amorphic state of "being" time as well as multiplicity (multiples) were one and the same with the single original "stuff" or "body." [301] Being one with the original "body," that is, without "extensions," time like this original substantial μόνας was but a perpetual oneness or "now." For absolute material (corporeal) oneness without differentiation or multiplicity, and absolute temporal oneness without extension, that is, the absolute and perpetual "now," are to Aenesidemus one and the same thing. Only through diversification or articulation of the original corporeal oneness, in short, through the corporeal multiples, does time as we know it come into existence, being as it were, the relationship or measure of these multiples in their various motions. Hence time, as contrasted with the "now," distinguishes itself from the original single matter only through the intermediary of the multiples, which likewise evolve from

[299] Sextus Empiricus, *Adv. Math.* X, 216 ff.; compare also "*Pyrrhonia*" III, 138: "In point of substance, some have affirmed that time is corporeal, so, for instance, the school of Aenesidemus, arguing that it differs in nothing from the existent and the first body . . ."

[300] Compare Sextus Empiricus, "*Pyrrhonia*" I, 210; III, 138; *Adv. Math.* X, 216; X, 230; X, 231.

[301] According to Sextus Empiricus (in: *Adv. Math.* X, 233) Aenesidemus declares the "air" to be the first or original "stuff." It is quite possible that Aenesidemus, in accordance with the Stoic tradition (Diogenes Laertius VII, 137: "Fire . . . is also called aether — *αἰθέρα*"), interprets the Heracleitean πῦρ as *πνεύμα* or *αἰθέρα*. Already Theophrastus (in: frag. 3; *De Igne* 4) had defined the Heracleitean πῦρ as *πνεύμα*, a definition which is not entirely without support in Heracleitus himself.

the original corporeal oneness. Time, then, is originally co-substantial with the "first single body," and, hence, is one and the same with that perpetual "now" which fully conforms to this unarticulated primaeval substance. By identifying time with motion, with the "interplay" of corporeal multiplicity, Aenesidemus propoundes an amazingly modern conception of the relative nature of time.

A most penetrating and exhausting analysis and criticism of the various definitions of time proposed by different philosophers is to be found in Sextus Empiricus.[302] According to him, "if we rely on appearances, time seems to be something (τι), but if we depend on the various arguments about it, it appears to be unreal (ἀνυπόστατος).[303] Now some define[304] time as the interval (διάστημα) of the motion of the whole—meaning by the whole the universe;[305] others[306] as the actual motion of the

[302] See, in general, "*Pyrrhonia*" III, 136 ff.; *Adv. Math.* X, 169 ff. The following six paragraphs of our text are direct quotations from the "*Pyrrhonia*" III, 136-150.

[303] In *Adv. Math.* X, 169 Sextus also mentions that some "suppose that the universe is eternal, while others assert that it was created in time."

[304] These "some" are obviously the Stoics who are quite unanimous in their definition of time as the "interval (διάστημα) of the motion of the universe or whole." Compare Diogenes Laertius VII, 141; Stobaeus, *Eclogues* I, 254; I, 256; I, 260; *Schol. in Arist.* 80 a 6. This Stoic definition is derived from the fact that time is being measured by the motion of the heavenly bodies which in their totality constitute the universe.

[305] Compare also *Adv. Math.* X, 170; IX, 332: ". . . the Stoics . . . declare the whole to be the universe (κόσμος) . . ."

[306] See Aristotle, *Physics* 218 a 33: "Some assert that it (time, note by the present author) is the movement of the whole," . . .

Schol. in Arist. 80 a 6 contains the remark that this definition is actually Platonic; see *Timaeus* 47 D ff.; compare also Diogenes Laertius III, 73; Stobaeus, *Eclogues* I, 268, who tells us that Plato defined time as the motion and revolution of the heavens.

In *Adv. Math.* X, 170 ff. Sextus Empiricus objects to this Platonic definition by showing (a) that time and cosmic motion are not one and the same thing, because we can also conceive of the universe as being at rest (*ibid.* X, 171); (b) that every motion takes place in time; hence time, as the motion of the universe, would have to take place in time (*ibid.* X,

universe.[307] Aristotle,[308] or as some say, Plato,[309] call it the number of the "before" and "after" in motion.[310] Strato,[311] or as some say, Aristotle, call it the measure of motion and

172); (c) that the cosmic motion is always the same, while time as such might be "more" or "less" and, therefore, is not always the same (*ibid.* X, 173); (d) that Aristarchus, who merely accepted a motion of the earth but not of the universe as such, was nevertheless able to perceive time (*ibid.* X, 174); and (e) that men who either live in caves or are blind since birth have no conception of the cosmic motion but, nevertheless, possess a notion of time. From all this would follow that we can conceive of time without cosmic motion (*ibid.* X, 175).

[307] Compare *Adv. Math.* X, 170: "Some declare that time is the interval of the motion of the universe, and others that it is the motion itself of the universe. But neither according to the view of the first nor according to that of the second does any time exist. For if the interval of motion and motion itself are nothing apart from the moving object, time, since it is the interval of cosmic motion or, to be more precise, cosmic motion itself, will be nothing else than the moving universe. And time will be the universe in a certain state . . . which is absurd." *Ibid.* X, 171: "It is possible to conceive the motion of the universe as non-existent at a certain time, so that time will not be the motion of the universe." *Ibid.* X, 172: "All motion takes place in time; therefore the motion of the universe also will take place in time. But time does not take place in time. For, if so, it will either exist in itself or as one time in another." *Ibid.* X, 173: "The motion of the universe is always the same, but time is not always the same . . . Therefore the motion of the universe is one thing and time another." *Ibid.* X, 175: "It is possible (for the blind) to conceive of time without conceiving the revolutions of the heasens."

[308] Aristotle, *Physics* 219 a 13 ff. Against this definition of time, see *Adv. Math.* X, 176, where Sextus Empiricus opines that if this were actually so, then that which is at rest or in motion could not be in time, or if it were in time could not at once be in motion and at rest. Compare also *Adv. Math.* X, 228.

[309] Compare *Timaeus* 30 A; also *Parmenides* 140 D ff.

[310] Compare *Adv. Math.* X, 176: "But if time is this . . . what is at rest and motionless will not exist in time."

[311] Compare *Adv. Math.* X, 177 ff., where Sextus Empiricus, after objecting to Aristotle's definition of time as number (see note 308, *supra*), points out that Strato's definition is but an attempt at rectifying Aristotle's error. Nevertheless, also Strato seems to be in error, because the measure or the act of measuring as such is not itself time, but something that takes place in time. Sextus Empiricus also suggests that it is perhaps better to call motion and rest the measures of time rather than time the measure of motion or rest, because motion and rest are more easily to perceive than time as such. *Ibid.* X, 180; compare also *ibid.* X, 228.

rest.[312] According to Demetrius the Laconian,[313] Epicurus [314] calls it a contingent product of contingent products (*σύμπτωμα συμπτωμάτων*) . . .[315] And in point of substance some have

[312] Compare *Adv. Math.* X, 178 ff.: "... that which measures motion or rest exists in time (and is not itself time); and if so, time will not be that which measures motion and rest. For time does not exist in time. If time is the measure of motion and rest for the reason that it is co-extensive both with motion in so far as it is motion; and with rest in so far as it is rest, then ... time will not be the measure of motion and rest any more than motion and rest are the measure of time."

[313] Compare also Sextus Empiricus, *Adv. Logic.* II, 348; Diogenes Laertius X, 26. In *Adv. Math.* X, 181, Sextus Empiricus mentions Democritus instead of Demetrius. That this is obviously a mistake committed by a scribe who mistook Democritus for Demetrius (see note 73 ff., *supra*) has already been mentioned. Compare also *ibid.* X, 219.

[314] According to *Adv. Math.* X, 219 ff., days and nights and hours are not substances, but merely accidents (*συμπτώματα*), or to be more exact, "accidents of the bodies." But these *συμπτώματα* are not "timeless" (*ἄχρονα* — *ibid.* X, 225), but are measured by time (*ibid.* X, 226).

[315] Compare *Adv. Math.* X, 219; Stobaeus, *Eclogues* I, 252. In *Adv. Math.* X, 181, time is, according to the Epicureans, "a day-like and night-like phantasm."

Time is, according to the Epicureans, a *σύμπτωμα συμπτωμάτων*, because it is something contingent to certain experiences of our senses, experiences, that is, which in themselves are contingent.

Sextus Empiricus objects to this Epicurean definition of time by denying not only the existence of things contingent or "accidents" (*σύμπτωμα* — *Adv. Math.* X, 238 ff.), but also the existence of motion and rest (*ibid.* X, 245) as well as that of days, nights, hours, etc. (*ibid.* X, 242). If, on the other hand, days, nights and hours actually exist, then they would also be time; and since, according to the Epicureans, they would have time as an accident, time itself would be its own accident (*χρόνος αὐτὸς ἑαυτοῦ σύμπτωμα* — *ibid.* X, 244).

See also *Adv. Math.* X, 185 ff.: "Epicurus, then, asserts that time is the phantasm either of the day composed of the hours or of that which is illuminated by the sun ... But he would not say that time is a phantasm of the day composed of the hours; for this day itself—I mean the twelve hour day—is time, and therefore, if the phantasm of this is conceived to be time, time will be a phantasm of time." *Ibid.* X, 187: "Neither the phantasm of the day which is illuminated ... (is time); for this exists in time, and therefore, if time is our phantasm of this day, this day will exist in our phantasm." *Ibid.* X, 188: "When the universe is destroyed, according to the Epicureans, there exists neither day nor night ... but it is absurd to say that when the universe is destroyed time does not exist; for the statement that it was destroyed once and that it is being destroyed are indicative of time."

affirmed that time is corporeal,[316] so, for instance, the School of Aenesidemus,[317] arguing that it differs in nothing from being and the "first thing corporeal"—others that it is incorporeal. . . .[318] Should it be granted that the assertion of the corporeality of time is false—and that of its incorporeality likewise false, then, obviously, the unreality of time will be granted. For it cannot be anything but one or the other of these. Nor yet can we apprehend which theories are true, and which are false, owing to the equal weight of the rival opinions,[319] as well as the perplexity regarding the criterion and proof.[320] Hence for this very reason we shall be unable to affirm anything positive about time (*οὐδὲν ἔξομεν περὶ χρόνου διαβεβαιώσασθαι*)." [321]

"Since time does not seem to subsist without motion or even rest,[322] if motion is abolished, and likewise rest, time too is abolished. Nevertheless the following objections against time are made by some.[323] If time exists, it is either limited or unlim-

[316] See also *Adv. Math.* X, 215; X, 216; and particularly X, 230 ff., where Sextus Empiricus points out that if time were actually corporeal, it must be either in motion or at rest. But motion and rest take place in time. Hence by saying that time is corporeal we would actually state that a body moves or is at rest within a body; or, if body were time, that time moves or is at rest within time. Compare also note 307, *supra*.

[317] As to the refutation of Aenesidemus, see *Adv. Math.* X, 231 ff.; X, 216 ff.; also X, 217. Compare note 294, *supra*.

[318] This passage probably refers to the Stoics. Compare *Adv. Math.* X, 218; X, 234. Time can be incorporeal in two ways: it is either a *σύμπτωμα* or *συμβεβηκὸς* of something else (Epicurus; see *ibid.* X, 215; compare note 313 ff., *supra*); or a *καθ' αὐτὸ τι νοούμενον πραγμα*—something which merely exists in the mind (*ibid.* X, 218). This latter opinion is combatted in *Adv. Matoh.* X, 234 ff., where Sextus Empiricus shows that if this *τι* should be corporeal, there could be nothing incorporeal, because the *τι* encompasses everything. If, on the other hand, the *τι* would be incorporeal, there could be nothing corporeal.

[319] Compare, in general, "*Pyrrhonia*" I, 8.

[320] See, in general, "*Pyrrhonia*" II, 14-80; II, 134-193.

[321] "*Pyrrhonia*" III, 140.

[322] Compare, in general, "*Pyrrhonia*" III, 63 ff.; *Adv. Math.* X, 189 ff.; X, 188.

[323] The same objections, but more in detail, are found in *Adv. Math.* X, 189-214; compare also *Adv. Music.* 61-67.

ited.[324] But if it is limited, it began at a certain time and will end at a certain time. Consequently, there was once a time when time was not . . . ; and there will be a time when time will not be . . . ,[325] which is absurd.[326] Hence time is not limited. But if time is unlimited, since part of it is said to be past, part present, and part future, the future and the past are either existent or non-existent—and there remains only the present—time would be limited and the original difficulties will follow.[327] And if the past exists and the future exists, each of these will be present. But it is absurd to call past and future time present. Neither, then, is time unlimited. But if it is neither unlimited nor limited, time does not exist at all." [328]

" If time exists it is either divisible or indivisible.[329] Now it is not indivisible, because it is divided . . . into present, past, and future. Yet it is not divisible either, for each divisible thing is measured by some part of itself, the measure coinciding with each part of the measured. . . .[330] But time cannot be measured by any part of itself.[331] If, for instance, the present should measure the past, it will coincide with the past and will therefore be the past. . . .[332] And if the future should measure the rest, it will be present and past; and so likewise the past will be future and present [333]—which is nonsense. Neither,

[324] See also *Adv. Math.* X, 189 ff.

[325] Compare Aristotle, *Metaphysics* 1071 b 6 ff.; Plato, *Timaeus* 37 D ff.; 38 B.

[326] Compare *Adv. Math.* X, 189: " The " having been one " as well as the " there will be once " are but denominations of different times."

[327] Namely that there was once a time when time did not exist; or that there will be once a time when there is no time. See *Adv. Math.* X, 190: " Time is held to be composed of non-existents—of the past which exists no longer, and of the future which does not yet exist. And that which is composed of non-existents will be non-existent itself."

[328] Compare *Adv. Math.* X, 191 ff.

[329] Compare *Adv. Math.* X, 193 ff.; see also *ibid.* X, 195; X, 196; X, 198.

[330] Compare *Adv. Math.* X, 194.

[331] Compare *Adv. Math.* X, 194 ff.

[332] Compare *Adv. Math.* X, 195.

[333] Compare *Adv. Math.* X, 195.

then, is time divisible. But if it is neither indivisible nor divisible, it does not exist." [334]

"Time, too, is said to be tripartite; partly past, partly present, and partly future. Of these, both the past and the future are non-existent.[335] For if the past and the future time exist now, each of them would be present. Neither is the present existent. For if the present time exists it is either divisible or indivisible.[336] Now it is not indivisible, because what changes is said to change in the present time; [337] and nothing changes in an indivisible time. . . .[338] Hence present time is not indivisible. But neither is it divisible, for it could not be divided into a plurality of "presents," since time present is said to change into time past imperceptibly . . . ; nor yet be divided into past and future.[339] For so it will be unreal, having one part of itself no longer existent and the other part not yet existent.[340] Hence, too, the present cannot be the end of the past and the beginning of the future, for then it will both be and not be existent.[341] For it will exist as present, but will

[334] "*Pyrrhonia*" III, 143; *Adv. Math.* X, 196.

[335] Compare *Adv. Math.* X, 197.

[336] Compare *Adv. Math.* X, 197.

[337] This passage might refer to Plato, *Parmenides* 156 C ff.; and Aristotle.

[338] Compare *Adv. Math.* X, 197; *Adv. Music.* 66, 67; Aristotle, *Physics* 237 a 14; see also "*Pyrrhonia*" III, 106 ff.; *Adv. Math.* X, 119; X, 198, where the following argument is advanced: "If time (the present, note by the present author) is actually indivisible, it will neither have a beginning where it is joined on to the past, nor an end whereby it is joined on to the future. For that which has a beginning and an end is not divisible. But if it has neither a beginning nor an end, it will not have a middle either, for the middle is conceived by way of comparison in its relation to the other two. And as having neither a beginning nor middle nor end, it (namely the present) will not exist at all."

[339] This is obviously an attack upon the Stoics; compare Stobaeus, *Eclogues* I, 258.

[340] Compare *Adv. Math.* X, 199; see also X, 192.

[341] Compare *Adv. Math.* X, 200 ff., where it is stated that if one defines the present as the end of the past and the beginning of the future and thus construes one single time out of two non-existent times, then not only the one time, but every time has been abolished: "If the present is the

not exist because its parts are non-existent. Therefore it is not divisible, either.[342] But if the present is neither indivisible nor divisible, it does not exist. And when neither the present nor the past nor the future exist, time, too, is non-existent. For what is composed of things unreal is itself unreal." [343]

"This argument, too, is alleged against time: If time exists it is either generable and perishable or ingenerable and imperishable.[344] Now it is not ingenerable and imperishable, since part of it is said to be past . . . and part of it to be future. . . . Neither is it generable and perishable.[345] For things created must be created from something existent; and things which perish must perish into something existent. . . .[346] If, then, time perishes into the past, it perishes into the non-existent; and if it is generated from the future, it is generated out of a non-existent. . . . But it is absurd to say that anything is generated out of a non-existent or perishes into a non-existent. Therefore time is not generable and perishable." [347]

"Furthermore, since everything which becomes or is generated seems to become or to be generated in time, time itself, if it becomes or is generated, because or is generated in time. Either, then, it becomes in itself or as one time in another. But if it becomes in itself, it will be at once both existent and non-

limit of the past, and the limit of the past has passed away together with that whereof it is the limit, the present will no longer exist." See also *ibid.* X, 202.

[342] Compare *Adv. Math.* X, 201.

[343] Compare *Adv. Math.* X, 202.

[344] Compare, in general, Aristotle, *Physics* 251 b 15 ff.; *Metaphysics* 1071 b 7; Plato, *Timaeus* 37 D; 38 B.

The terms "generated" and "perishable" as well as "ungenerated" and "unperishable" are mutually inclusive terms; compare Aristotle, *De Coelo* 282 a 30.

[345] Compare *Adv. Math.* X, 203; X, 204; X, 205.

[346] Compare *Adv. Math.* X, 205. This dogma was upheld by all Greek thinkers, including Plato, Aristotle, Epicurus (see Lucretius, *De Rerum Natura* I, 151: "Ex nihilo nihil, in nihilum nil posse reverti"), and Posidonius (see Stobaeus, *op. cit.* I, 434).

[347] Compare *Adv. Math.* X, 206.

existent. For since that within which a thing becomes must exist before the thing which becomes within it, the time which becomes in itself does not yet exist in so far as it becomes, but does already exist in so far as it becomes in itself.[348] If the present becomes in the future, the present will be future; and if it becomes in the past, it will be past.[349] And the same might be said about other times; so that one time does not become in another. But if time becomes neither in itself nor as one time in another it is not generable.[350] And it has been shown that it is not ingenerable either.[351] Being, then, neither generable nor ingenerable, time is wholly non-existent; for each existing thing necessarily must be either generable or ingenerable." [352]

Thus Sextus Empiricus in his dissertation on the nature of time but applies the basic Sceptic principle of the *ἰσοσθένεια τῶν λόγων*; the maxim "which opposes appearances to judgments in any way whatsoever, with the result that, owing to the equipollence of the objects and reasonings thus opposed, we are brought first to a state of mental suspense and, afterwards, to a state of unperturbedness (*ἐποχή*) and intellectual quietude" (*ἀταραξία*).[353] For the main purpose "of the Sceptic is that of opposing to every proposition an equally valid proposition" (*παντὶ λόγῳ λόγον ἴσον ἀντικεῖσθαι*).[354]

[348] Compare *Adv. Math.* X, 207: "If time becomes or is generated as itself in itself, it will be something which has come to exist before it has come to exist." See also *ibid.* X, 208 ff.; "*Pyrrhonia*" III, 133.

[349] Compare *Adv. Math.* X, 210: "Nor does time become as one time in another—the future, for instance, in the present, and the present in the past. For if time becomes in another time, each of the times will necessarily relinquish its own position and occupy the post of the other."

[350] Compare *Adv. Math.* X, 211.

[351] Compare *Adv. Math.* X, 212: "The fact that time cannot be ingenerable is easy to demonstrate. For if it is ingenerable and has neither become nor will become, one time alone, the present, will exist."

[352] The last six paragraphs were direct quotations from Sextus Empiricus, "*Pyrrhonia*" III, 136-150.

[353] "*Pyrrhonia*" I, 8; compare also *ibid.* I, 10; I, 26; I, 18 ff.

[354] *Ibid.* I, 12.

The eclectic Platonist Plutarch of Chaeronae, who in this is practically in complete accord with Plato's *Timaeus*, conceives the origin of our world as being a divine act of bringing orderly motion and harmonious unity into the originally amorphic and chaotic cosmic soul.[355] The means by which the Godhead achieves this orderly single harmony is the re-arranging of the universe according to rational number.[356] Time, then, is but the single orderly and harmonious motion of the cosmic soul according to number. And since there could be no time before the universe had been put into order, time itself must have been created together with universe: it became together with the cosmic harmony.[357] The world as we know it as well as time itself, then, has a definite beginning. Plutarch's objection to the eternity of our world and of time—which found much acclaim among the so-called "Neo-Pythagoreans" and the majority of the Platonists of his day[358]—is prompted by his desire to prove thus the supremacy of the spiritual over the physical and, hence, over time; of God over the world.[359]

[355] *De Animae Procreatione in Timaeo* (edit. Xylander) VI, 21; VI, 23; IV, 24-26; IV, 33. Creation means, therefore, that the Godhead instilled order into the originally irrational and chaotic cosmic soul (a) by endowing it with reason and harmony; (b) by turning its infinite, amorphic, restless, and indivisible shape or essence into a single and unified form; (c) by replacing the irregular movements with orderly motion; and (d) by enabling the soul to proceed from mere sense perceptions to rational insights.

[356] *Ibid.* IV, 11-20; IV, 29-32.

[357] *Quaestiones Platonicae* (edit. Xylander, p. 1007) VIII, 4, 4 ff.

Similar views as those offered by Plutarch concerning the beginning of the world through an act of ordering the originally disorderly cosmic soul are to be found in those writings which circulated under the name of *Hermes Trismegistus*. Certain parts of these writings—translated by Apuleius as "*Hlera ad Aesculapium*" (4th century A. D.) and containing the Hermetic teachings concerning the origin of our world, time, etc. — were known to St. Augustine.

[358] Compare *Placita Philos.* II, 4, 1; *De Natura Mundi* (ascribed to Ocellus Lucanus) I, 1; Stobaeus, *Eclogues* I, 420; Censorinus, *De Die Natali* IV, 3; Varro, *Rerum Rustic. Lib. Tres* II, 1, 3; Tertullian, *Apologeticum* 11; Theophilus, *Ad Autolycum* III, 7, 26.

[359] *Quaestiones Platonicae* IV.

The Alexandrian Judaeo-Hellenistic development of philosophy,[360] which is but one aspect of the general syncretistic fusion of Greek speculation and oriental religious trends,[361] constitutes an entirely different problem from that of the various Graeco-Hellenistic schools. For in the Judaeo-Hellenistic movement the Jewish religious tradition always remains throughout the basic foundation of its manifold philosophical utterances. Hence the newly acquired Greek ideas are dealt with merely as a means to a profounder understanding and more liberal interpretation

[360] It was at Alexandria that traditional Judaism met with Greek thought, an event which in some respect had a very significant influence upon both. Thus we soon find at Alexandria a purely Hellenistic and a Judaeo-Hellenistic development of philosophical speculation — two movements which were rather closely related and which continued to influence each other to a great degree. The Christian Alexandrinism, on the other hand, which is essentially a development of Jewish Alexandrinism, never did really influence the closing period of ancient thought. This was primarily due to the fact that the purely Christian tenets in their irreconciliable rigorism were too antagonistic to the general Hellenistic mood and, hence, could not be accepted or absorbed by the latter.

[361] The first traces of Greek influence upon the interpretation of the *Old Testament* might be found in the so-called *Septuaginta* (see Daehne, A., *Geschichtliche Darstellung der jüdisch-alexandrinischen Religions-philosophie*, vol. II, p. 1-17) which constitutes the first known document of Alexandrian Judaism. The oldest parts of the *Septuaginta*, particularly the translation of the *Pentateuch*, go back to the reign of Ptolemaeus Philadelphus (283-247 B. C.). It is claimed that the translators strove for a complete elimination of all anthropomorphic interpretation of Jehova, and did so through the influence of Plato, Aristotle, and some of the first Stoics (Chrysippus).

The fourth book of the Maccabaeans, particularly its moral teachings concerning the control of emotions through reason, definitely betrays Stoic elements. The *Book of Wisdom*—ascribed to King Solomon and composed before Philo of Alexandria—likewise shows the influence of Stoic and Platonic ideas. Compare, for instance, *Book of Wisdom* VII, 21; VII, 22 ff.; VIII, 7; VIII, 20; IX, 18. A more thorough analysis of this book should prove that some of its content is dependent on Posidonius.

The spurious *Epistola ad Philocratem* (ascribed to Aristeas, 100 A. D.?), which describes in detail the incidents leading to the translation of the *Old Testament* (*Septuaginta*), displays not only a definite acquaintance with Greek (Stoic) philosophy, but also recognizes the importance of the latter for Jewish theology and philosophy. Compare, for instance, *Epistola ad Philocratem* 16, 201, 143, 144 ff.

or exploitation of the Scriptural truths.[362] Within this general but neither unified nor systematically carried out attempt to amalgamate the traditional Jewish religious tenets with the intellectual achievements of ancient Greece Philo of Alexandria stands out as being not only the most influential but also the most thorough and methodical thinker.[363]

To be sure, the religious tradition of the Old Testament had, in a predominantly idealistic manner and through the medium of metaphorical imagery, already touched upon the problem of time.[364] It had done so in order not only to bring solace and

[362] In Aristobulus, for instance, we find definite traces of Greek thought. Compare Eusebius, *Praep. Evang.* VIII, 91, 38. He claims that the Mosaic teachings coincide with the best that Greek philosophy had produced, a statement which he tries to substantiate by insisting that Plato and other Greek thinkers had made use of the *Old Testament.* This same view is also found in Eusebius, *op. cit.* XIII, 12, 1; IX, 6, 3; Flavius Josephus, *Contra Apionem* I, 22; Clement of Alexandria, *Stromates* V, 560 A; Cyrillus, *Contra Julianum* I, 29 D; Origen, *Contra Celsum* I, 13. Even St. Augustine (in: *De Doctrina Christiana,* II, 28, 43) for a time accepted this view. See, however, *De Civitate Dei* VIII, 11, 12.

[363] Philo's attitude towards Greek thought in general resembles somewhat that of the Scholastic theologians and philosophers. For his system is predominantly an elaboration of the main content of the orthodox Jewish religious dogma and tradition through the adoption of Greek scientific method and form. Philo always insists on the supremacy of Jewish theology which to him is the sum of all knowledge and wisdom. Being well acquainted with Greek philosophy and Greek language he gives not only due credit to the intellectual achievements of the Greeks, but actually calls Greece the cradle of science. Compare, for instance, *De Providentia* II, 9; see also Eusebius, *Praep. Evang.* VIII, 14, 52. At the same time he claims that Greek thought is but an outgrowth of the basic ideas contained in the *Old Testament.*

As to Philo's allegorical interpretation and exploitation of the *Old Testament,* see, among others, *De Migratione Abrahami* 402 D (450, edit. Mangey), where he states that a literal interpretation of the *Scriptures* represents merely their "body," while their allegorical exploitation actually reaches their "soul." This metaphor was extensively used by the Catechetical School of Alexandria as well as by the Gnostics. Compare, for instance, Origen's "Pneumatic Evangel."

[364] *Psalm* 90: 4: "For a thousand years in Thy sight are but as yesterday it is past, and as a watch in the night." *Isaiah* 43: 13: "Yea, before the day was I am He . . ." See also *2 Peter* 3: 8.

guidance to the "exiled," [365] but also to strengthen the hope and faith in ultimate deliverance from evil and oppression.[366] Despite all temporal adversities Divine Providence is envisioned as effectively entering and the directing the flow of time [367] towards its ultimate fulfilment. In this form ancient Judaism but expresses a much systematized and moralizing interpretation of time.[368] These basic notions were taken up by Philo who, in accordance with the Platonic model, insists upon a dual cosmic causality; [369] namely, the first "active" efficient cause and the first "passive" receptive cause—the infinite active and activating reason and the passive inanimate matter or "stuff," [370] which is amorphic and without properties as well as disorderly and motionless.[371] This definition of the "original matter," which is intended primarily to demonstrate the deficiencies of anything devoid of Divine guidance and efficacy, excludes the assumption of a world creation *ex nihilo* in the strict sense of the term. For it permits only a creationist theory which limits the act of creating to an act of rationally ordering and systematizing that which previously was in a chaotic and irrational state.[372]

[365] *Isaiah* 61: 1.

[366] *Zechariah* 14: 5; *Psalm* 34: 4; 34: 19; 40: 2; 89: 46; 126: 2; 126: 3; *Isaiah* 51: 1; 60: 22; 63: 9; *Proverbs* 12: 13; *Jonah* 2: 1.

[367] *Daniel* 4: 7; compare also the *Wisdom of Solomon* (or, the *Book of Wisdom*) XV-XIX.

[368] Compare Chroust, A.-H., "The Metaphysics of Time and History in Early Christian Thought," in: *The New Scholasticism*, vol. XIX (1945), no. 4, p. 322.

[369] These notions which Philo puts into the mouth of Moses, are actually taken from the Stoics. Compare Arnim, H., *Stoicorum Veterum Fragmenta* II, no. 300: "τὸ ποιοῦν καὶ τὸ πάσχον." — Seneca, *Epistola* LXV, 2; Diogenes Laertius VII, 134.

[370] *De Opificio Mundi* 2 B (3, edit. Mangey).

[371] *De Opificio Mundi* 4 E (5, edit. Mangey); *Quis Rerum Divinarum Heres Sit* 500 C (492, edit Mangey); *De Profugis* 451 D ff. (547 ff., edit. Mangey); *De Somniis* 1114 B (665, edit. Mangey); *De Victimis* 857 E (261, edit. Mangey).

[372] *Quis Rerum Divinarum Heres Sit* 499 A ff. (491 ff., edit. Mangey).

In complete accord with Plato's *Timaeus* Philo denies that our world, the orderly and harmonious cosmos, is without beginning.[373] Hence he defines times as something "which did not exist before the world (that is, before the rational ordering of the primaeval matter, note of the present author), but which was generated together with the world and was after its creation. For being afterwards the interval (διάστημα) of heavenly motion, time, as the motion, could not be before the thing which moves."[374] Accordingly he also denies that either God Himself or the Divine efficacy as such could ever be "in time,"[375] for God is eternal, that is, "above time." He likewise rejects the notion that the Divine act of original creation itself took place "in time," because time, which is but concomitant with cosmic motion, itself came into being through this creative act. In the same vein he refuses to accept a literal interpretation of the *Genesis*.[376] To him the sequence of the seven days is not to be understood in terms of actual time or duration, but rather as a "pattern" expressing the purely conceptual rank of all the different creative deeds.[377] In the final analysis Philo's definition of time, which he links to the creation of the physical world,

[373] *De Opificio Mundi* 2 B (3, edit. Mangey); *De Profugis* 452 B (457, edit. Mangey); — like Plato, Philo insists that the world is imperishable. See *De Migratione Abrahami* 416 B (464, edit. Mangey).

[374] *De Opificio Mundi* 5 D (6, edit. Mangey); compare also *Legum Allegoriarium Libri* 41 A (44, edit. Mangey); *Quod Deus Sit Immutabilis* 298 A (277, edit. Mangey).

[375] *De Opificio Mundi* 2 E (3, edit. Mangey).

[376] *Legum Allegoriarium Libri* 41 A (44, edit. Mangey); and *ibid.* 43 E (47, edit. Mangey).

[377] *De Opificio Mundi* 5 D (6, edit. Mangey). Before God undertakes the creation of the world He realizes that this work demands a spiritual model. Hence He first created the world of Ideas which afterwards function not only as models, but also as efficient causes. Compare *De Opificio Mundi* 3 E ff.; 5 C; 7 B ff.; 29 C (4; 5; 7; 30, edit. Mangey); *Legum Allegoriarum Libri* 44 A (47, edit. Mangey); *De Migratione Abrahami* 404 B (452, edit. Mangey); — see also Plato, *Timaeus* 28 A ff.

offers the same dialectical difficulties we have encountered while discussing Plato's notion of time in the *Timaeus*.[378]

According to Plotinus [379] the Supreme and First Being, the Ineffable One, is to be conceived of in terms of an infinitely efficient and effective power which of sheer necessity, that is, on account of its ever overflowing and inexhaustable fullness,[380] generates all other being by communicating itself through its limitless perfection.[381] This never ending process of ever overflowing and commuting itself—which must not be understood as taking place "in time" [382]—can only be fully appreciated if we use the beautiful metaphor of an eternally radiating light all permeating as well [383] as ever attracting.[384] This relationship of the infinite efficacy on the part of the Ineffable One and the receptiveness on the part of all other being is not so much a "process" as what might be called an ever present state [385] comparable to an undeserved but nevertheless ever present and, hence, timeless "state of grace," caused by the ever ungrudgingly overflowing perfection of the First Being.[386] Hence time in an objective sense does not itself enter Plotinus' pantheistic

[378] See note 377, *supra*. Philo insists that before the creation of the physical world God created the supernatural realm of Ideas. Thus he also speaks of an "ideal" (ποιηθεὶς) and a "secular" (πλασθεὶς) man. Compare *De Opificio Mundi* 30 E (32, edit. Mangey); *Legum Allegoriarum Libri* 49 D; 57 A (53, edit. Mangey).

[379] Plotinus' main effort consists in bringing to an issue the religious trend of Hellenistic philosophy primarily on a Graeco-Hellenistic basis.—Whether Plotinus or his teacher Ammonius Saccus (see, Porphyry, *De Vita Plotini* III, 14) should be called the actual founder of the so-called Neo-Platonic movement is open to debate.

[380] *Ennead* V, 2, 1.

[381] *Ibid.* III, 2, 2; III, 3, 7; IV, 8, 6; V, 3, 12; V, 3, 15; V, 4, 1; VI, 7, 3; VI, 8, 18.

[382] *Ibid.* V, 1, 6.

[383] *Ibid.* VI, 4, 3; I, 7, 1; VI, 8, 18.

[384] *Ibid.* I, 8, 2; V, 1, 6; — compare also VI, 8, 18; V, 5, 7; VI, 4, 9. As to he nature of this "light," see *ibid.* VI, 4, 7; V, 5, 7.

[385] *Ibid.* V, 5, 9; VI, 5, 3; VI, 5, 4; VI, 4, 3.

[386] Thus all other being is, metaphorically speaking, but a mirror of the eternal "light."

system.[387] Timeless eternity [388] and boundless infinitude within the supersensual or spiritual true world make any temporal accentuation absolutely impossible.[389]

The Soul which partakes of the purely spiritual world as well as of the material world, to some extent imparts itself to this material world, thus becoming enmeshed in it.[390] It is this very involvement which causes the Soul to emerge from the timeless eternity of the purely spiritual world, and to enter definitely into the orbit of the merely temporal and finite.[391] Thus time together with the motions of the physical world are exclusively derived from the Soul, or to be more exact, defined in terms of the life of and motions within the Soul as such. For both time and physical motion depend for their "existence" on the various states or "differentiations" of the Soul's life: "The world moves in the Soul—there is no other place for motion in

[387] The first created being which resembles the Perfect Being as closely as any image may resemble its perfect model is, according to Plotinus, the Νοῦς. This Νοῦς which is identical with true existential being (compare *ibid.* V, 3, 5; I, 8, 2; III, 6, 6; VI, 2, 2), that is, with timeless and unchangeable permanency (compare *ibid.* I, 8, 2; III, 6, 6; III, 8, 7), is, in the final analysis, contemplative visualization of absolute truth and absolute reality without reference to time (compare *ibid.* VI, 2, 8; IV, 3, 25; V, 1, 4) or progress (compare *ibid.* V, 3, 5; V, 1, 4; II, 9, 1).

[388] According to Plotinus the true spiritual world is eternal. Eternity itself is "authentic existence enshrouding the being within being which is instantaneous, complete, and everpresent total continuity" (*ibid.* III, 7, 3). Eternal, then, is "that which neither was nor will be, but which just is, in short, being completely at rest" (*ibid.* III, 7, 2).—Compare also Proclus, *Theol. Plat.* III, 16; *Inst. Theol.* 55. Compare also Simplicius, *op. cit.* 706, 27.

[389] *Ennead* V, 9, 10.

[390] *Ibid.* I, 8, 14; III, 6, 14; III, 8, 3; IV, 8, 7; VI, 4, 16; IV, 8, 3.

[391] *Ibid.* I, 5, 7; VI, 5, 11; III, 7 ff.; — III, 7 ff. is Plotinus' tractate on eternity and time. After the section on eternity (III, 7, 1-6) he discusses time proper (III, 7, 7 ff.), beginning with a critique and refutation (a) of non-Aristotelean theories of time, and (b) of Aristotle's definition of time. Among the non-Aristoteleans he chastises in particular the Stoics for having defined time as something related to motion, that is, as something which might be (a) the interval of motion; (b) the measure of motion; or (c) something concomitant of motion. He attacks Aristotle for having declared that time is the number or measure of motion.

the world than in the Soul—and its motion is in the time inherent in the Soul. Displaying its activities one after another in an always changing succession, the Soul begets succession with its activity; and with another act of reasoning after a previous one the Soul brings forth what formerly did not exist. Because neither the newly produced act of reasoning nor the present state of the Soul is similar to its previous state. Along with the different phases of life, and by virtue of them, there was a difference of time. A difference of life, therefore, took time; and the everlasting forward motion of life takes everlasting time; and the life that is past is past time. If anyone should say that time is the life of the Soul in the motion by which it changes from one phase of life to another, he would have the right idea." [392] And since the Soul alone produces both time and the physical world, all physical motion is "in time," while the motions (life) of the Soul are not in time.[393]

Plotinus defines eternity as "the mode of an authentic existence enshrouding the being within being which is instantaneous, complete, and ever present total continuity." [394] From eternity we have to distinguish time or temporality, which is as essential to the notion of becoming as eternity is to the concept of being. Thus Plotinus claims that time originates through the desire of the Soul to translate into physical terms what it had visualized in the purely spiritual world": Previously time was resting in being and did not exist. . . .[395] But an officious "nature," desiring to rule itself and . . . to seek fuller existence than its present state, started to move; and time started too . . . and we produced time in the direction of everlasting succession . . . having made time the image of eternity.[396] For since in the Soul there was a restless power that always wished to change

[392] *Ibid.* III, 7, 2. [393] *Ibid.* III, 7, 13. [394] *Ibid.* III, 7, 3.

[395] Compare Sextus Empiricus, "*Pyrrhonia*" III, 138; *Adv. Math.* X, 216 ff.; see notes 26 and 296, *supra.*

[396] Compare Plato, *Timaeus* 37 C ff.

what it saw into something else, the Soul did not care to retain within itself the Whole Solid and Uniform Completeness, the Ineffable One; but . . . escaped into multiplicity . . . by consuming the unity . . . This power of making the visible world in imitation (of the eternal spiritual world, note by the present author) . . . in itself became temporal, having made the temporal instead of the eternal.[397] Then it handed over this world to be the slave of the time so produced, having caused it to exist entirely in time, and having encompassed all its revolutions in time. For the world moves in the Soul. . . ." [398]

Since the Soul cannot completely or instantaneously grasp the purely intellectual or spiritual in its totality, the whole solid and uniform completeness of the Ineffable One, all its motions are but successive. Thus it also moves successively from the spiritual to the physical world and, by doing this, moves at the same time the physical world which resides in the Soul intellectually. In this fashion the Soul generates within itself time as a mere image of eternity, primarily for itself, but subsequently also for the physical world as such.[399] Hence time is actually "a state of the Soul consisting of alternating movements from one sphere of life to another." [400] For the Soul "cannot receive time from something that is outside the Soul, just as it cannot conceive of eternity without the true being." [401] Hence time might be called the "mode of living" or "the vision" of the Soul: it is at once the image of eternity as well as an expansion of the Soul into the visible world.[402]

[397] If the Soul were completely and always preoccupied with the supernatural, there would be no time but merely timeless eternity.

[398] *Ennead* III, 7, 2; compare also Simplicius, *Comment. in Arist. Phys.* 788, 30 ff.

[399] *Ennead* III, 7, 10.

[400] *Ibid.* III, 7, 10. [401] *Ibid.* III, 7, 7; III, 7, 11.

[402] *Ibid.* III, 7, 11; III, 7, 12; compare also Simplicius, *Comment. in Arist. Categ.* 88ζ–89γ; *Comment. in Arist. Phys.* 792, 20–795, 3; 702, 19 ff.; 769, 6 ff.; Proclus, *In Plat. Timaeum Comment.* 248 a ff.; 252 E.

Within Plotinus' notion of time a definite "direction" or "aim" of the

Like Plotinus Jamblichus avers that time is something pertaining to the Soul; a certain symmetry of motion inherent in the Soul which imparts itself to the physical world.[403] Hence to him time is "something the essence of which consists in the movement of the Soul—the projection of the spiritual world which comes into physical being according to the law of true being—the transition from one state into another."[404] It is itself "a sort of being which measures the process of becoming,"[405] something which "forever is irresistibly coordinated to motion, in the same manner as being is related to becoming."[406] From all this it follows that Jamblichus distinguishes between "time derived from the universe" (*χρόνος ἐξηρημένος ἀπὸ τοῦ κόσμου*) and "physical time" (*χρόνος φυσικὸς*);[407] between abstract time and concrete time.[408] Out of the *χρόνος ἐξηρημένος ἀπὸ τοῦ κόσμου*—the supernatural or spiritual time,

general "time flow" can be discerned. Time originates through the efforts of the Soul to return into the Ineffable One. It is the time future, therefore, in which the Soul plunges back into this Ineffable One. Compare *Ennead* III, 7, 4.

Plotinus' conception of the relation between time and eternity was not without some definite influence upon certain early Christian thinkers. Compare, for instance, St. Augustine, *Confessiones* VII, 13.

Since the teachings of Plotinus concerning the nature of being, the universe, man, and the relation of time to eternity are strictly of one piece, it is only natural that his thoughts on the universe should altogether determine his ideas about man and his notions of the immobility of time. For as soon as he had defined the universe as something indestructible, unchangeable, and eternal, he had banished time from his system; and the more he tried to explain away time, the more he excluded the possibility of history.

[403] Compare, for instance, Simplicius, *Comment. in Arist. Categ.* 88ζ–89γ; *Comment. in Arist. Phys.* 792, 20 ff.; 769, 6 ff.; Proclus, *In Plat. Timaeum Comment.* 248 A; 252 E. As to Proclus' definition of time, see Simplicius, *Comment. in Arist. Phys.* 795, 4 ff.

[404] Simplicius, *Comment. in Arist. Categ.* 89*a*.

[405] Simplicius, *Comment. in Arist. Phys.* 793, 17 ff.

[406] *Ibid.* 793, 22.

[407] *Ibid.* 793, 27 ff.

[408] *Ibid.* 767, 7 ff.; 793, 30 ff. For additional information about Jamblichus, see *ibid.* 702, 19 ff.; 786, 11 ff.; 792, 20 ff.

or the abstract (χωριστὸς) concept of time which is part of the world of absolute being—the physical or empirical (concrete—ἀχωριστὸς) time evolves as the measure of the different motions within the sentient world of becoming.

This is not the place to discuss the various notions concerning the meaning and essence of time that have been proposed by the early Christian thinkers [409] or by the many sects of the so-called Gnostics who in this were strongly under the influence of Graeco-Hellenistic thought as developed at Alexandria. There is, however, one early Christian thinker—Tatian—who definitely must be singled out as having dealt with the problem of time in a rather outstanding manner. This treatment, in its origin, although not in its application, is undoubtedly the product of the Graeco-Hellenistic tradition. The assertion of the ever present Divine Efficacy throughout the universe, which can only be experienced by the true believer, is probably the starting point of Tatian's amazingly profound treatment of the problem of time.[410] In keeping with an essentially " phenomenalistic " and " subjectivistic " interpretation of time Tatian proposes that it just exists and persists ever present and indivisibly,[411] and does so without change or motion as long as God, the Creator of time, resolves it to exist and persist. It is merely the Divine forces throughout the universe which, like so many streams, move through time, that is, through something which like the banks of a stream is always static and at rest and, consequently, always the same in contrast to the ever changing and ever moving streams of the Divine Efficacy. Since time itself is static and does neither move nor change, all our notions of temporal move-

[409] Compare Chroust, A.-H., " The Metaphysics of Time and History in Early Christian Thought," in: *The New Scholasticism*, vol. XIX (1945), no. 4, p. 322 ff.

[410] In: *Oratio ad Graecos* 26.

[411] *Ibid.* 26: " Why do you divide time, saying that one part is past, and another present, and another future? For how can the future be passing if the present exists? "

ment or change are but the product of human deception or fallacious imagination. For it is not time which moves, but we ourselves who are moving through time, that is, moving through something which itself forever remains at rest: [412] "As those who are sailing imagine in their ignorance, while the ship is borne along, that the hills are in motion, so you do not know that it is you who are passing along, but that time (ὁ αἰὼν) [413] remains present as long as the Creator wills it to exist." [414]

The only temporal motion conceivable is, therefore, that of time beginning (together with the created universe) through a creative act of Divine Omnipotence; and that of time ceasing, which takes place together with the end of the created universe. Or to be more exact, time "moves" only in so far as it begins through the Divine Efficacy, and ends whenever the foremost object of the manifestation of this Divine Efficacy—the universe—ceases to exist. Time, then, is always co-existent as well as co-extensive with created being and, at once, is motionless and unchangeable created being itself. It is that created static being *through* which the Divine Efficacy moves, not "with" which it moves. In order to appreciate more fully Tatian's attitude towards time we must always keep in mind that above all he insists that God is the sole creative and moving principle.

[412] Similar ideas have already been expressed by Carneades who insists that while travelling on a ship we are under the erroneous impression that not we ourselves but the objects on both banks of the river are in motion. Compare Sextus Empiricus, *Adv. Math.* VII, 409 ff.; Cicero, *Acad.* I, 26, 84 ff.; II, 7, 19; II, 25, 79; Eusebius, *Praep. Evang.* XIV, 8, 5.

[413] The term *αἰὼν*, which is one of the staple words of the Gnosis, probably goes back to Aristotle, *De Coelo* 279 a 17 ff.

In the number and various classifications of the different Aeons we find, according to some Gnostics, not only the origin of all numerical systems, but also that of time and its different "components" or component parts such as the four seasons, the twelve months of the year, the twelve hours of the day, the thirty days of the month, etc. Thus the Gnostic Aeons are at the same time synonymous with "Ideas," numbers, elements, stars, time, or the component parts of time. — The similarity of some of these Gnostic views with certain passages from Plato's *Timaeus*, particularly 37 C ff., is rather obvious.

[414] *Oratio ad Graecos* 26.

The various treatments of the problem of time proposed by the ancient thinkers show that to some time is simply non-existent, while to others it constitutes one of the most general and real forms of our personal experiences or modes of ordering our manifold experiences. Viewed from the identity of the "self" time appears to be but the (empirical) element of succession intertwined with that of duration. To those who conceive of time in an *objective* sense time constitutes something that is measured by motion or is motion itself, while in a *subjective* sense it denotes the immediate awareness of the sequel of our perceptions or conceptions determined by certain internal or external factors. Again, to some it means something "transcendental," while to others it is but the immanent form of certain experiences and their various contents,[415] a form, that is, which itself is derived from other experiences. Some try to establish the "*a priori nature*" of time—*a priori* in so far as to them time is not derived from any concrete experience, but as a most general "mode" of reasoning underlies every orderly and articulate experience; while others declare it synonymous with or a contingent product of our varying personal (psychological) sensations. Defined in this latter sense the workings of certain psychological factors alone would determine time, its existence as well as its meaning.

ANTON-HERMANN CHROUST.

[415] Some of those who insist on the "immanance" of time admit, however, that it might have a "transcendental corollary."

AN ARISTOTELIAN ANTITHESIS

TO EVEN a casual reader of the *Corpus Aristotelicum* it soon becomes evident that Aristotle had a predilection for the contrast which he expresses by the phrases *γνωριμώτερα τῇ φύσει*, and *γνωριμώτερα ἡμῖν*, or some similar expressions. When a great thinker returns to a thought repeatedly, we who read him, do well to understand that thought as fully as possible. I intend in this paper to investigate the idea behind the above-mentioned phrases.

One of the classic *loci* for this question is *Anal. Post.* I 71^{b} 32:

πρότερα δ' ἐστὶ καὶ γνωριμώτερα διχῶς. οὐ γὰρ ταὐτὸν πρότερον τῇ φύσει καὶ πρὸς ἡμᾶς πρότερον. οὐδὲ γνωριμώτερον καὶ ἡμῖν γνωριμώτερον. λέγω δὲ πρὸς ἡμᾶς μὲν πρότερα καὶ γνωριμώτερα τὰ ἐγγύτερον τῆς αἰσθήσεως, ἁπλῶς δὲ πρότερα καὶ γνωριμώτερα τὰ πορρώτερον. ἔστι δὲ πορρωτάτω μὲν τὰ καθόλου μάλιστα, ἐγγυτάτω δὲ τὰ καθ' ἕκαστα.

It must be noted that this excerpt is taken from a context where Aristotle is speaking of the premises of a really scientific demonstration; a fact which explains why *πρότερα* is joined to *γνωριμώτερα*. The very first sentence of the chapter under consideration opens with a definition of scientific knowledge, *ἐπίστασθαι δὲ οἰόμεθα ἕκαστον ἁπλῶς . . . ὅταν τὴν τ' αἰτίαν οἰώμεθα γινώσκειν δι' ἣν τὸ πρᾶγμα ἐστιν, ὅτι ἐκείνου αἰτία ἐστί, καὶ μὴ ἐνδέχεσθαι τοῦτ' ἄλλως ἔχειν.* A definition which, as is to be expected, shows the usual Aristotelian stress on knowledge of causes. Passing over the rest of the chapter until we come to the sentence immediately preceding our passage, we find that that is a partial description of what the premises of a demonstration should be, *αἰτιά τε, καὶ γνωριμώτερα δεῖ εἶναι καὶ πρότερα, αἴτια μὲν ὅτι τότε ἐπιστάμεθα ὅταν τὴν αἰτίαν εἰδῶμεν, καὶ πρότερα, εἴπερ αἰτία, καὶ προγιγνωσκόμενα.* Once having

posited the principle that the premises must be the causes of the conclusion Aristotle must hold that they are *πρότερα καὶ γνωριμώτερα* because a cause by its very nature is prior to, and better known than, its effect. He then states that something may be prior, and better known in two ways, *οὐ γὰρ ταὐτὸν πρότερον τῇ φύσει καὶ πρὸς ἡμᾶς πρότερον, οὐδὲ γνωριμώτερον καὶ ἡμῖν γνωριμώτερον.* He does not explicitly say which of the two is demanded that a proposition may be a premise of a demonstration, but we can perhaps ascertain this for ourselves by referring to a passage in the first chapter, 71ª 1—*πάσα διδασκαλία καὶ πάσα μάθησις διανοητικὴ ἐκ προϋπαρχούσης γίνεται γνώσεως . . . ὁμοίως δὲ καὶ περὶ τοὺς λόγους, οἵ τε διὰ συλλογισμῶν, καὶ οἱ δι' ἐπαγωγῆς· ἀμφότεροι γὰρ διὰ προγινωσκομένων ποιοῦνται τὴν διδασκαλίαν.* Since he says here that all learning must begin from what is already known, it is obvious that at the very least the premises of a demonstrative syllogism must be *γνωριμώτερα ἡμῖν.* But if that is *all* he meant in our passage, there was no need for him to make the distinction between *γνωριμώτερον* and *ἡμῖν.* Now it is not usual that Aristotle in his terse and trenchant way of writing makes useless distinctions. What conclusion then can we legitimately draw from the fact that he has here gone to the trouble of making a distinction? Obviously, I think, that when he says that the premises must be *πρότερα καὶ γνωριμώτερα* he means *τῇ φύσει* and not simply *πρὸς ἡμᾶς.*

That is what the text seems to mean and that apparently is what Themistius thought it meant, as can be seen from his comment on this passage (*Paraphrasis* I, 2) *εἰ δ' οὕτως πρῶται καὶ οὕτως πρότεραι ἔσονται αἱ προτάσεις, δῆλον ὡς τὸ πρότερον ἂν ἔχοιεν οὐ τὸ πρὸς ἡμᾶς, ἀλλὰ τὸ πρὸς τὴν φύσιν. ἡμῖν μὲν γὰρ πρότερα τὰ αἰσθητὰ καὶ καθ' ἕκαστα, τῇ φύσει δὲ τὰ καθόλου τε καὶ πόρρω τῆς αἰσθήσεως, ἐπεὶ καὶ τὰ γνωριμώτερον ἔξουσιν οὕτως ὡς τῇ φύσει γνωριμώτεραι οὖσαι· τοιοῦτον γὰρ ἡ ἀπόδειξις, οὐ πρὸς τὴν ἡμετέραν γνῶσιν καὶ συγκατάθεσιν ἀφορᾷ, ἀλλὰ πρὸς*

ἀλήθειαν καὶ ὡς ἔχει τὸ πράγμα κατὰ φύσιν, κἂν ἡμῖν μὴ δοκῇ. It is interesting to see that the medieval scholastics interpreted it in this way also, as can be seen from St. Thomas Aquinas' *Commentarium in libros Analyticorum Posteriorum*, caput II, lectio IV:

probat (Aristotelis) quod demonstrationis propositiones sint causae conclusiones, quia tunc scimus, cum causa cognoscimus. Et ex hoc concludit ulterius quod sint priores et notiores, quia omnis causa est naturaliter prior et notior suo effectu. Oportet autem quod causa conclusionis demonstrativae sit notior, non solum quantum ad cognitionem "quid est" set etiam quantum ad cognitionem "quia est." Non enim ad demonstrandum quod eclipsis solis est, sufficit scire quod est lunae interpositio, sed oportet etiam scire quod luna interponitur inter solam et terram. Et quia prius et notius dicitur dupliciter, scilicet "quoad nos," et "secundum naturam"; dicit consequenter quod ea, e quibus procedit demonstratio, sunt priora et notiora simpliciter et secundum naturam, et non quoad nos.

In the next sentence Aristotle says quite simply that the *πρότερα καὶ γνωριμώτερα πρὸς ἡμᾶς* are those things which are more easily perceived by the senses, while on the other hand the *ἁπλῶς πρότερα καὶ γνωριμώτερα* are those which are further removed from sense perception; and of all things, the universal is furthest removed from sense-perception, and the individual singular is most readily perceived by the senses. Apparently therefore we can say quite simply that the universal is *πρότερον καὶ γνωριμώτερον τῇ φύσει* while the singular is *πρότερον καὶ γνωριμώτερον πρὸς ἡμᾶς*.

But this seemingly is in contradiction to what he says in the very first Chapter of the *Physics* 184ª 16-26:

πέφυκε δὲ ἐκ τῶν γνωριμωτέρων ἡμῖν ἡ ὁδὸς καὶ σαφεστέρων ἐπὶ τὰ σαφέστερα τῇ φύσει καὶ γνωριμώτερα· οὐ γὰρ ταὐτὰ ἡμῖν τε γνώριμα καὶ ἁπλῶς. διόπερ ἀνάγκη τὸν τρόπον τοῦτον προάγειν ἐκ τῶν ἀσαφεστέρων μὲν τῇ φύσει ἡμῖν δὲ σαφεστέρων ἐπὶ τὰ σαφέστερα τῇ φύσει καὶ γνωριμώτερα. ἔστι δ' ἡμῖν τὸ πρῶτον δῆλα καὶ σαφῆ τὰ συγκεχυμένα μᾶλλον· ὕστερον δ' ἐκ τούτων

γίγνεται γνώριμα τὰ στοιχεῖα καὶ αἱ ἀρχαὶ διαιροῦσι ταῦτα. διὸ ἐκ τῶν καθόλου ἐπὶ τὰ καθ' ἕκαστα δεῖ προϊέναι· τὸ γὰρ ὅλον κατὰ τὴν αἴσθησιν γνωριμώτερον, τὸ δὲ καθόλου ὅλον τί ἐστι.

Now all of this is in accord with what he said in the *Analytics* until we come to the last sentence, for in that he says that *τὸ ὅλον* is more known to the senses, and *τὸ καθόλου* is a kind of *ὅλον*.

It would seem then that *τὸ καθόλου* is *ἐγγύτερον τῆς αἰσθήσεως* and we are landed in a full-blown contradiction. But if we read the passage carefully we can see, I think, that the contradiction is only apparent. In this passage Aristotle must be using *τὸ καθόλου* in a sense different from his usual one. He cannot be speaking here of the true universal, but rather of an incipient one. On this whole matter Ross is very enlightening. "It is true that in *Anal. Post.* 1, 2, it is implied that we should proceed from *τὰ γνωριμώτερα τῇ φύσει* not from *τὰ γνωριμώτερα ἡμῖν*. But that is because Aristotle is there stating the nature of scientific proof. Here, on the other hand, he is describing the method of attaining knowledge of the *ἄρχαι* (*πειρατέον διορίσασθαι πρῶτον τὰ περὶ τὰς ἀρχάς*). This is the very reverse of scientific proof. It is the method of reasoning back from what is confusedly given in experience to what that presupposes. . . . In *Anal. Post.* the *καθόλου* is described as farthest from sense and therefore as *γνώριμον τῇ φυσει*, not *ἡμῖν*, while here the *καθόλου* is identified with the *γνώριμον ἡμῖν* from which the study of first principles must proceed. It is clear that *καθόλου* is not used in its usual Aristotelian meaning. The references must be not to a universal conceived quite clearly in its true nature, but to that stage in knowledge in which an object is known by perception to possess some general characteristic (e. g. to be an animal) before it is known what its special characteristic is (e. g. whether it is a horse or a cow). It is this phase of Aristotle's meaning that is illustrated by the example of the child who recognizes the general appearance presented by all men and that presented by

all women, without noticing the special appearance of its father and its mother, and therefore calls all men father and all women mother (184 b 12-14)." [1]

Furthermore, in this passage too, Themistius seems to support the interpretation herein given. He says apropos of this passage (*Paraphrasis*, fol. 15 b Chap. 1):

τὸ πρότερον οὖν διχῶς καὶ πρὸς ἡμᾶς καὶ πρὸς τὴν φύσιν ἐστί· πρὸς ἡμᾶς μὲν οὖν πρότερον τὸ γνωριμώτερον ἡμῖν καὶ ὁ ῥᾷον ἂν καταλάβοιμεν, οἷον τὰ ὀνόματα καὶ αἱ συλλαβαὶ τῶν γραμμάτων· πρὸς δὲ τὴν φύσιν πρότερα τὰ κατὰ τὴν οὐσίαν ἁπλούστερα, οἷον τὰ γράμματα τῶν ὀνομάτων, ἀνάπαλιν τὲ ἡ πορεία· ἡμεῖς μὲν γὰρ ἀπὸ τῶν συνθέτων ἐπὶ τὰ ἁπλούστερα πρὸς δὲ τὴν φύσιν πρότερα ἀναλύομεν, ἡ φυσις δὲ ἐκ τῶν ἁπλῶν τὰ σύνθετα μηχανᾶται. ὅταν μὲν οὖν περὶ τῶν συγκειμένων ποιώμεθα λόγον, ἐκ τῶν φύσει προτέρων αὐτὸ ἀποδείξομεν· ὅταν δὲ περὶ τῶν ἀρχῶν, ἐκ τῶν πρὸς ἡμᾶς προτέρων, καὶ ἔστιν ἐκείνη μὲν ἡ κυρίως ἀπόδειξις, αὕτη δὲ εἰ καὶ μὴ κυρίως, ἀλλ' ἡμῖν ἱκανῶς. ἐὰν οὖν ἀρχώμεθα τοῦ περὶ τῶν ἀρχῶν λόγου, ἀπὸ κοινῶν τινῶν καὶ πλείοσιν ὑπαρχόντων οὐ ταρακτέον ἀπὸ γὰρ τούτων ἐπὶ τὰ ἴδια βαδιούμεθα. γνωριμώτερα δ' ἡμῖν τὰ κοινὰ τῶν ἰδίων ἐστίν, εἴ γε σύγκειται μᾶλλον, καὶ ὥσπερ ἐν τοῖς αἰσθητοῖς, εἰ προσίοι τι ζῶον, ὅλου τοῦ σώματος ἡ ὄψις θάττον ἀντιλαμβάνεται ἢ κεφαλῆς τε καὶ χειρῶν καὶ ποδῶν, οὕτω γοῦν εἴποι τάχιον ἂν ὅτι ζῶον τὸ προσίον ἢ ὅτι ἄνθρωπος, οὕτως ἐν τοῖς ὑπὸ λόγου θεωρουμένοις τὰ καθόλου τε καὶ κοινὰ σαφέστερα ἡμῖν τῶν προσεχῶν καὶ ἰδίων ἐστίν, καίτοι μάλλον ἐκείνων συγκεχυμένα· ἔστι γὰρ καὶ τῷ νῷ οἷον μὲν ὅλον τι τὸ καθόλου, οἷον δὲ μέρη ὅσα ἐκεῖνο περιλαμβάνει.

It would seem, then, that the text of the Physics actually does not offer any difficulty to the interpretation of *γνωριμώτερον τῇ φύσει* as the universal and of *γνωριμώτερον ἡμῖν* as the singular.

We must now however consider a pair of passages which seem to give a different meaning to expressions similar to the ones we are considering, viz:

[1] W. D. Ross; *Aristotle's Physics, a revised text with introduction and commentary*, Oxford, 1936; pp. 456-7.

First, *Physics* 189 [a] 2-8:

ταύτῃ τε δὴ ὡσαύτως λέγουσι καὶ ἑτέρως, καὶ χεῖρον καὶ βελτιον, καὶ οἱ μὲν γνωριμώτερα κατὰ τὸν λόγον, ὥσπερ εἴηται πρότερον, οἱ δὲ κατὰ τὴν αἴσθησιν (τὸ μὲν γὰρ καθόλου κατὰ τὸν λόγον γνώριμον, τὸ δὲ καθ' ἕκαστον κατὰ τὴν αἴσθησιν· ὁ μὲν γὰρ λόγος τοῦ καθόλου, ἡ δ' αἴσθησις τοῦ κατὰ μέρος.

Second, *Metaphysics* 1018 [b] 29-34:

ταῦτα μὲν οὖν πρότερα τοῦτον λέγεται τὸν τρόπον, ἄλλον δὲ τρόπον τὸ τῇ γνώσει πρότερον ὡς καὶ ἁπλῶς πρότερον. τούτων δὲ ἄλλως τὰ κατὰ τὸν λόγον καὶ τὰ κατὰ τὴν αἴσθησιν. κατὰ μὲν γὰρ τὸν λόγον τὰ καθόλου πρότερα κατὰ δὲ τὴν αἴσθησιν τὰ καθ' ἕκαστα.

The difficulty here, as it seems to me, lies in the fact that λόγος and αἴσθησις are so juxtaposed as to lead one to think that λόγος must surely mean "reason" as opposed to "sense." But if this be true then we have two portions of our own being under consideration, and yet we say that to one the universal is πρότερον καὶ γνωριμώτερον and to the other the singular. What then has become of the distinction between πρότερον καὶ γνωριμώτερον τῇ φύσει and πρότερον καὶ γνωριμώτερον ἡμῖν? The difficulty is, I think, more apparent than real. The phrase κατὰ τὸν λόγον has reference here not so much to the faculty of reason itself but rather to the kind of intelligible object grasped by reason and in these two passages Aristotle is simply stressing the fact that what is primarily grasped by the intellect is the abstract universal stripped of all individuating characteristics. On the other hand the complex individual thing with all its individuating characteristics firmly imbedded in it is that which the senses primarily grasp. Consequently, in accord with the old dictum "Nihil in intellectu nisi prius fuerit in sensu," it is the individual thing which is chronologically πρότερον καὶ γνωριμώτερον ἡμῖν. From this sensible singular thing we are then able, by a process of intellectual abstraction, to draw forth the intelligible universal, by means of which we come fully to

understand the singular. Since this is so, the passages under consideration so far from clashing with our previous interpretation actually strengthen it, because the object of the reason is in itself, i. e., in nature, more intelligible than the object of sense. Now the object of reason is *τὸ καθόλου*, while that of sense is *τὸ καθ' ἕκαστον*. Therefore, *τὸ καθόλου* is *γνωριμώτερον τῇ φύσει*, while *τὸ καθ' ἕκαστον* is *γνωριμώτερον ἡμῖν*.

We can find further confirmation for this interpretation in Book Z of the *Metaphysics* 1029 [b] 3-12:

πρὸ ἔργου γὰρ τὸ μεταβαίνειν εἰς τὸ γνωριμώτερον. ἡ γὰρ μάθησις οὕτω γίγνεται πᾶσι διὰ τῶν ἧττον γνωρίμων φύσει εἰς τὰ γνώριμα μᾶλλον. καὶ τοῦτο ἔργον ἔστιν, ὥσπερ ἐν ταῖς πράξεσι τὸ ποιῆσαι ἐκ τῶν ἑκάστῳ ἀγαθῶν τὰ ὅλως ἀγαθὰ ἑκάστῳ ἀγαθά, οὕτως ἐκ τῶν αὐτῳ γνωριμωτέρων τὰ τῇ φύσει γνώριμα αὐτῷ γνώριμα. τὰ δ' ἑκάστοις γνώριμα καὶ πρῶτα πολλάκις ἠρέμα ἐστὶ γνώριμα, καὶ μικρὸν ἢ οὐθὲν ἔχει τοῦ ὄντος· ἀλλ' ὅμως ἐκ τῶν φαύλως μὲν γνωστῶν αὐτῷ δὲ γνωστῶν τὰ ὅλως γνωστὰ γνῶναι πειρατέον, μεταβαίνοντας, ὥσπερ εἴρηται, διὰ τούτων αὐτῶν.

Here Aristotle says plainly that in all men the process of knowing proceeds from the less known in nature to the more known. Here again because all knowledge begins in the senses we must hold that the *ἧττον γνωρίμων φύσει* is the sensible singular while *τὰ γώριμα μάλλον* towards which we must work are universals. He illustrates this by an ethical reference: sometimes things which in themselves are good are not good for us and our task from the ethical point of view is so to better ourselves that at last the good in itself is also the good for us. In like manner in the field of knowledge, our task is, starting from those things, which although more intelligible in themselves, are yet less intelligible for us, so to progress that we make the things which are intelligible in themselves intelligible for us, The next sentence then, it seems to me, clinches the argument, for it says that things which are more intelligible to us have little or nothing of being. Now how is anything at first more

known to us? Precisely by its accidents (for only through accidents do we attain to substance), and in Book E of the Metaphysics 1026 ^{b} 21 we are told *φαίνεται γὰρ τὸ συμβέβηκος ἐγγός τι τοῦ μὴ ὄντος*. Hence it is the sensible singular which is *γνωριμώτερον ἡμῖν* and the universal which is *γνωριμώτερον τῇ φύσει*.

Now, just one more passage: it is not directly related to our consideration, but when it is examined in the light of Aristotles' complete teaching it helps to throw some light on our problem. In Book A *ἔλαττον* of the *Metaphysics* 993 ^{b} 7-11 speaking of the difficulty of *ἡ περὶ τῆς ἀληθείας θεωρία* Aristotle says, "*ἴσως δὲ καὶ τὴς χαλεπότητος οὔσης κατὰ δύο τρόπους, οὐκ ἐν τοῖς πράγμασιν ἀλλ' ἐν ἡμῖν τὸ αἴτιον αὐτῆς· ὥσπερ γὰρ τὰ τῶν νυκτερίδων ὄμματα πρὸς τὸ φέγγος ἔχει τὸ μέθ' ἡμέραν, οὕτω καὶ τῆς ἡμετέρας ψυχῆς ὁ νοῦς πρὸς τὰ τῇ φύσει φανερώτατα πάντων.*" This comparison of the blindness of our intelligence when faced with *τὰ τῇ φύσει φανερώτατα πάντων* to the blindness of a bat in the day-light seems to me to sound just as Plato would have spoken concerning our intelligence when faced with the Forms and perhaps we have here a reminiscence, either conscious or unconscious, in Aristotles' example, of his master. Now, if anything can be said with certainty concerning Aristotles' relation to Plato, I think it is certain that the Aristotelian *τὸ καθόλου* coincides, *at least to some extent,* with the Platonic *τὰ εἴδη*. Consequently *τὰ φύσει φανερώτατα* are here *τὰ καθόλου* and as a corollary to this we must say that *τὰ ἡμῖν φανέρωτατα* are *τὰ καθ' ἕκαστον*.

Incidentally, there is an interesting echo of this passage in the *Summa contra Gentes* of St. Thomas Aquinas, Liber III, Cap. 25, "Quod intelligere Deum est finis omnis intellectualis substantiae." In the middle of the Chapter St. Thomas is stating an objection to his thesis, and he sums it up in these words,

> Et praecipue intellectus humani videtur quod non sit intelligere

optimum intelligible simpliciter, propter eius debilitatem; habet enim se, ad cognoscendum illud quod est maxime cognoscibile, *sicut oculus noctuae ad solem.*

As a result of all this comparison of texts, I think it is rather well established that for Aristotle *τὸ γνωριμώτερον τῇ φύσει* is the universal, while *τὸ γνωριμώτερον ἡμῖν* is the singular, so that the whole matter can, perhaps, be best summed up in the words of the *Analytica Posteriora* 72 ^{a} 33:

λέγω δὲ πρὸς ἡμὰς μὲν πρότερα καὶ γνωριμώτερα τὰ ἐγγύτερον τῆς αἰσθήσεως, ἁπλως δὲ πρότερα καὶ γνωριμώτερα τὰ πορρώτερον. ἔστι δὲ πορρωτάτω μὲν τὰ καθόλου μάλιστα, ἐγγυτάτω δὲ τὰ καθ' ἕκαστα.

Gerard P. Minogue.

Brooklyn, N. Y.

NOTES AND COMMENTS

FROM THE SECRETARY'S DESK

When these lines shall have appeared the twenty-first annual meeting of our Association at Toronto, Canada on Dec. 27, 1946 will be history. Our general theme, " The Philosophy of Being," was certainly a Scholastic philosopher's notion of what a philosophy meeting should be about, something of a Roman holiday for metaphysicians. Here was no traffic with the popular or the superficial, no compromise with anything that does not pertain to philosophy in its most profound sense. Yet there may be here more of an answer to the needs of this philosophical moment than at first appears. A recent reviewer of a new study of Plato, incidentally, notes a present day hunger for metaphysics. After several centuries of neglect by philosophers themselves of the being that is the proper object of their own intellects which is also pre-eminently the object of philosophy, seekers of the ultimate are perhaps deciding to enter again into their own proper domain. Being mere second-rate echoes of science ultimately becomes very vacuous. As most of the sectional round tables of our meeting also adhered to the general themes as it was related to their respective divisions of philosophy the collected papers which will constitute volume twenty-one of our *Proceedings* should be a worthwhile addition to the philosopher's library. Taken as a whole they are a confident assertion of the ability of the human intellect to know ultimate reality when that faculty adheres faithfully to its own principles, an assertion much needed in a period of deep disparagement of reason as evidenced by the present popularity of the anti-intellectual existentialism of the Danish theologian, Soren Kierkegaard.

While we were holding forth in the frozen fastness of the

North our esteemed contemporaries, the American Philosophical Association (Eastern Division) were discussing various themes at Yale University. A panel discussion on *The Nature of Man* conducted by Professors Brand Blanshard, Abraham Edel, Lewis M. Hammond, and Paul Tillich, under the chairmanship of Dr. John H. Randall, Jr. occupied the first morning, Dec. 27th. Concurrent sessions on the afternoon of that day considered: *Planning and Democracy* by Professor Joseph D. Blau; *Economic Principle Implicit in a Planned or Free Economy* by Miss Sarah M. Watson; and *Ideology and Peace* by Dr. John Sommerville. At the other session Professor Edwin Biser discussed *Entity and Aspects as Pertaining to Physical Theory*; Dr. Robert C. Baldwin spoke on *Mysticism and Mechanics*, and Professor Maximillian Beck on *Reason and Existence*. At the evening dinner President Katherine E. Gilbert gave her Presidential Address on *Recent Poets and Man and His Place*.

One concurrent session on the morning of Dec. 28th had the theme, *The Bearing of the Arts on Philosophic Issues* with Professor Milton C. Nahm speaking on *Some Philosophic Issues Implicit in the Theory of Artist as Creator*; Dr. Iredell Jenkins on *Towards an Objective Definition of Beauty*; and Professor Irwin Edman on *The Challenge of the Arts to Philosophy*. The other concurrent session sought to answer *What is the Empirical Method?* Dr. Lewis W. Beck analyzed *The Distinctive Traits of an Empirical Method; On God and Immortality* by Dr. Frederic B. Fitch; *Empirical Method in Metaphysics* by Dr. Victor Lowe. The closing afternoon panel discussion had for its theme: *The Contribution of Education to Philosophy* with Doctors Raphael Demos, Scott M. Buchanan, Charles W. Hendel, and Harold Taylor speaking under the chairmanship of President Gilbert. It is noted that a reprint of the *Philosophical Review* of Vol. 55, No. 4, July, 1946 now makes available the

Presidential Addresses given during 1945-46 before the three divisions of the Association.

It is a pleasure to note that Professor Vernon Bourke of St. Louis University is the Aquinas Lecturer at Marquette University in January, 1947 on the subject: *St. Thomas and the Greek Moralist.* We are certain Dr. Bourke will provide a distinguished preface for Scholastic Ethics, something very definitely needed. This is the eleventh of an eminent series of lectures in philosophy. The previous titles all published by the Marquette University Press are as follows: *St. Thomas and the Life of Learning* by the late Rev. John F. McCormick, S. J. (1937) (founder of the series); *St. Thomas and the Gentiles* by Professor Mortimer J. Adler (1938); *St. Thomas and the Greeks,* by Professor Anton C. Pegis (1939); *The Nature and Functions of Authority,* by Professor Yves R. Simon (1940); *St. Thomas and Analogy,* by Rev. Gerald B. Phelan (1941); *St. Thomas and the Problem of Evil,* by Jacques Maritain (1942); *Humanism and Theology,* by Professor Werner Jaeger (1943); *The Nature and Origins of Scientism,* by Rev. John J. Wellmuth, S. J.; *Cicero in the Court of St. Thomas,* by Professor E. K. Rand (1945); and *St. Thomas and Epistemology* by Rev. L. M. Regis, O. P. (1946). Through this column we should like to publicize any philosophy lecture series given in any part of the country. We note a St. Thomas Aquinas Lecture Series at the Manhattanville College of the Sacred Heart in New York City. Dr. Pegis gave the last lecture and Dr. Phelan will give the next in the series on March 6, 1947 on the subject, *The Originality of St. Thomas.* The lecture will be in connection with year long *Centenary Program of the College* beginning last September and extending to the close of this academic year. The Sisters of Mercy in Chicago are also celebrating a centenary of educational service in America. To both communities we extend our cordial felicitations and wish them every blessing for the centuries that lie ahead. We have been

pleased also to receive from Mundelein College of Chicago the first volume of the Mu Nu Sigma Lectures. The subject is *Some Illustrations of St. Thomas' Development of the Wisdom of St. Augustine*, and the lecturer, Dr. Phelan.

We are sure the members of the Association are always interested in what their contemporaries think of them. We therefore quote the following from *Philosophy*, the *Journal of the British Institute of Philosophy*, July (1946) on Volume 19 of our *Proceedings: Philosophy in Post War Reconstruction.*

"Could a League of Philosopher-Kings do for the world what a League of Nations has failed to do? Certain it is that without a philosophical foundation the best-laid schemes of statesmen and economists are bound to fail. Only when the nature of man is understood as the metaphysician and ethicist understands it and not after the fashion of the behaviorist and chemist will there be much hope of an enduring peace. That is a brief statement of the theme of this latest volume from the Catholic Philosophical Association of America. Naturally in such a collection of necessarily brief papers there is little possibility of detailed or elaborate exposition, but within the limits set there is much of value. An able paper by Professor Pegis deals with the failure of Mediaeval Schoolmen to work out an adequate scheme of International Law, a failure that was repaired by the work of the post-Reformation Suarez who wrote three hundred years ago an analysis of the basis and meaning of International Law which has not been surpassed. A number of ancillary problems: *The Christian Concept of Law*; *Liberalism*; *A Philosophy of Education*, are competently dealt with. As the author of the last named paper reminds us "The essential work of the philosopher is not national in character. There is no possibility of discussing the thought of an Aquinas, an Augustine, or a Socrates in purely local terms; these men and their thought belong to all humanity." The presence of the word "Catholic" on the title page should not therefore suggest a sectarianism or parochialism of outlook. The Catholic Church has proved herself an able guardian of the *philosophia perennis.*"

The review was written by Thomas Corbishley.

Our very able and active Vice-President, Rev. Joaquin F.

Garcia, C. M. of St. John's University, Brooklyn, writes to say that during the last academic year the New York Round Table in Philosophy held five meetings under the chairmanship of Dr. Elizabeth Salmon of Fordham University, all on topics from the field of Metaphysics. Doctor Francis F. Coffey of Immaculate Conception Seminary, Huntington, L. I. is chairman for the Round Tables for this academic year. The first meeting of this year in November had for its subject: *The Relationship of Intellect and Will.* Four additional meetings are planned before June. The New York Regional Conference has been one of the most active in the country setting an excellent example for the other conferences. We feel that the real life of our Association is very much bound up with active regional conferences. We very much hope that our Toronto meeting will provide the impetus for a regional Conference in that city. The secretary asks information on election of officers and past and prospective meetings of all conferences for publication in this column. We note Manhattanville College lists in its Century Program for Feb. 1, 1947, a symposium on *The Contributions of Philosophy to World Cooperation,* organized for the College by an advisory committee of professors of philosophy from Universities of Chicago, Columbia, Fordham and Manhattanville College. Happy New Year to all members.

CHARLES A. HART,
Secretary.

The Catholic University of America.

TEACHING METAPHYSICS

While the object of metaphysics is real yet it is not sensible. Its insensibility often causes confusion in the mind of the beginning student of metaphysics and is a challenge to the enthusiastic instructor of metaphysics. How can a supersensible object be placed out before the mind of the student? For years the student has been thinking concretely of individual instances. He has, it is true, learned something of universalizing in his study of the physical sciences. Although he has been generalizing from individual observations and experiments he nevertheless associates with his conclusions individual examples. Here we see that the object of the physical sciences is real and yet is also sensible either in the initial observation or in the concretion of a universalized conclusion. A teacher of the physical sciences can usually find at hand some concrete instance that is a manifestation of a general physical law.

The teacher of metaphysics does not have the same ease of vividly calling forth concrete instances. In fact, to begin with, his stock in trade, his subject matter is not sensible. And so, like the successful artist poet, the successful artist teacher of metaphysics must, even more than other teachers, be a master of analogy. He must make his object of study available to the imagination as well as to the intellect of the student, even if, at times, only through the use of metaphors and similes. Perhaps some sort of drawing to show the real objectivity of being and of substance apart from the accidents (which are the object of the physical sciences) will enable the imagination to aid the intellect. If words alone become the substitute for a more helpful visualization, the words used may, for the student, be impregnated equivocally or even be meaningless.

Once the hurdle has been jumped by instructor and student and forward movement is made in the field of metaphysics,

the beauty of thought, the joys that come with its study, the vigor of power that surges within the breast of the pursuer of fundamental truth so engages and lifts the mind, and yet anchors it firmly to earthly material and spiritual supersensibilities that inevitably and imperceptibly God becomes the hunted. Yes, as Aristotle reminds us, metaphysics is theology, for it leads to God.

As the more practical-minded student finds himself far beyond the threshold and deep in the house of metaphysics he may rightly take stock and think the thought that has its prodding value: "What good is metaphysics to me?" If the instructor has not already taken time to point out the practical applications of the basic concepts studied, he will as a thinking instructor find himself pleasantly challenged. He can answer by calling upon the students themselves with a little suggestive help to supply the many practical advantages that benefit the student of metaphysics, or he can himself when occasion offers "put in a plug" for his subject. The desirability of metaphysics is enhanced through occasional "sales talks" on the value of metaphysics and these may be interspersed throughout a semester's journey.

Although immersed in the subject, students, either without or with help from the instructor, will gradually see their knowledge content is increasing as their thought burns its way more and more through the outer accidentals of minerals, plants, animals, and men, to the inner substantial core, to the community of nature of species and genus and most general beingness that even includes God analogically. The student fills the chest of his mind with the riches of Ontology, Cosmology, Psychology, and Theodicy.

The quantitative content adds up day by day and becomes visible as the course proceeds. This amounts to an accumulation of knowledge which we might freely and a bit irresponsibly say increases by juxtaposition. Knowledge as a habit

also comes by intussusception as do other habits. Like submarines breaking water these habits emerge to a conscious level—the habit of careful observing, of looking for and finding relations among things; the habit of analyzing the individual, of breaking the whole into its parts in order to get at the object of study; the habit of making comparisons which naturally leads into the habit of universalizing with its consequent habit of synthesizing.

Throughout all, the student learns, by distinguishing, to refine his concepts, to become accurate, definite. The art of distinction trains him to be less likely to contradict easily, thus contributing one of the graces that lead toward mellowing and maturing the developing mind.

The student cannot say it was on this or that day that he formed the habit of law-abidingness. This law-abidingness—"a major structural learning" as Morrison might term it, rises out of the dawn of mind-movement and is one of the most important maturing forces in the upbuilding of a sound personality. Law-abidingness comes with the practice of basing all statements on objective evidence, of keeping one's feet on the ground, of wanting always to conform to objective reality. The rooting of all knowledge in objectivity becomes automatic and leads to the development of a secure loyalty that leaves its impress. This transfers over into loyalty to anything and everything objectively right and good. Thus is made firm a respect for law, the law of being, of the definitions of this and that substance or accident, respect for all law, natural, and positive, for law is a decree of God constituting a thing substantially and accidentally and impelling it toward perfection.

The habit of orderliness works itself into every phase of mental activity. The conviction grows that there is a place for everything. From this comes a deepening of the religious virtue, a subtle ever-growing respect for God Who is perceived to be the Supreme Intelligence behind the Divine Plan.

If the student is not yet convinced of the many virtues that can become his through a whole-hearted plunging into the realm of basic remote principles of things let him reflect on this: the study of metaphysics gives rise to the habit of being practical! For what is more practical than the formulation and *daily use* of the many formulae called first principles and the definitions of fundamentals? These are many and are derived from a consideration of the most general phases of being, and consist of the judgments termed the first principles of identity, non-contradiction, excluded medium, of possibility and actuality, and the definitions of substance, of personality, of accidents, of various species of substance, and many others. These definitions are used as principles, as guides many times daily. They are the basic judgments back to which all thinking comes and from which we press forward all our actions. These metaphysical concepts work their way out into everyday living, so that there is broad meaning in the statement that metaphysics rules the world.

It is no objection to say that metaphysics is in the clouds since it deals with the most general abstractions. All science, all knowledge deals with abstractions. The fact that metaphysics has for its province the most general concepts makes the practical daily use of metaphysics more insistent. The more common the concept the more widely based in reality is that concept. Its utility thus increases.

The study of metaphysics gives a fuller enjoyment to life and a satisfying feeling of being admitted into the more elite circle of the few who climb the heights of intellectuality, of kinship with the mentally great of all ages. The student too in time feels impelled toward the duty of planning constructively; he becomes a policy-former. All students who aim for executive work, whose ambition would place them high in public offices to serve their countrymen, their church, an industry, the field of education, their family and their friends, require the

habit of policy-forming, of knowing high ends and the means they might prudently use.

The greater the number of students who have the opportunity of studying metaphysics the greater becomes their contribution to civilization and the more enriched becomes the culture of the community of which they are a part. Their self-confidence in thinking on the fundamentals of life, their use of the ultimates as guides for their daily living assure a civilization of sane and sound thinking and acting.

The student of metaphysics may for the sake of intellectual curiosity and comparison study the imagined stories of human ideal existence, metaphysically based in an inadequate human plan, but he is aware that he has something for exceeding More's Utopia, or Plato's Republic, or Bacon's New Atlantis, or Campanella's City of the Sun, or any of the other merely human strivings for perfection. He gains an insight into the Divine Plan. And the Divine Plan as seen throughout a course on Metaphysics that points out the limitations of reason and the need for further religious training, is so satisfactory that the student constantly takes a down-to-earth-practical view as the certain means of travelling realistically and naturally at God's pleasure into the life of spirituality with its promised culmination in the Beatific Vision.

As he looks back over his acquaintance with the objects of metaphysics as found in the several courses in metaphysics offered in our Catholic colleges, he will, after finishing the formal courses, for the first time truly realize and appreciate the deepening of his skill in thinking, the broadening influence on his mental outlook, his self-confident ability to think for himself within limits humbly set, and he becomes conscious that his changed personality has been brought about greatly by his objective attitude toward reality. And as he compares himself with friends from other colleges who have not had his training in metaphysics he may become aware that he has

acquired an ease in the handling of supersensible thought-objects, that his knowledge content of metaphysics has grown large, that many habits have developed within him—the habit of careful observation, of analyzing, of making comparisons, of universalizing, of synthesizing. He has learned to distinguish, to refine his concepts, to hold firmly to objectivity and yet to be tolerant and not contradict easily. He now has more respect for all law, regulations, ordinances, even college rules. He becomes convinced that order and purpose and design in all things are merely the creatural participation of the eternal law. He begins to see the practical application of all that he has learned to daily living. And thus his reason aids his faith, and despite the imperfections all around him he knows for sure "that all's right with the world, God's in His Heaven."

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BOOK REVIEWS

Soviet Philosophy. By JOHN SOMMERVILLE. New York: Philosophical Library, 1946. Pp. xi + 269. $3.75.

Doctor Sommerville is Columbia University's Cutting Travelling Fellow in the U. S. S. R. His book was written after he had mastered the Russian language and had spent almost two years in the Soviet Union "with no other purpose than to make observations, gather materials, study documents unobtainable here, talk with leading thinkers and ordinary people and, in short do and obtain whatever might throw light on Soviet philosophy in theory and practice." (Preface, p. ix.)

This volume claims to be the first book attempting to cover the subject and for that reason the author feels that it should be an exposition of Soviet philosophy rather than a polemic against it. He is not unsympathetic to this philosophy as might be suspected from the freedom granted him behind the "Iron Curtain" and from his publisher's assurance that this book answers "the major intellectual need of our times—to de-enigmatize Soviet Russia." One can catch the dominant note of the volume when the author in the Preface (p. 10) states: "The only question we in America, as a sovereign state, are morally obligated to raise in our international relations is: can we live in peace with this philosophy?" Perhaps these are attitudes which explain the absence of critical appreciation in the entire book and especially of criticism unfavorable to Soviet thought and action.

Part One with four chapters deals with the Social Outlook and presents the Basic Perspective of Theory of Historical Materialism; Political Life or Socialist Democracy and the Dictatorship of the Proletariat; Soviet Ethics or Socialist Humanism; The Arts of Socialist Realism. Part Two, with five chapters is entitled "World View" and treats Our Universe or General Theory of Dialectical Materialism; the Human Mind or the Dialectical Method of Thinking; Pivotal Controversies in the History of Soviet Philosophy; Dissemination of Philosophy in the U. S. S. R.; About Reading. This last is really an extensive bibliography which lists only those works which offer no criticism of the Soviet method of thinking. There is a fairly complete index.

In praise of this entire presentation one must admire the clarity and simplicity of Dr. Sommerville's style. Since he gives scarcely any references to sources and even fewer citations he is not crippled in

style by the mechanism of such procedure or by the nebulosity of his sources. One has reason to suspect that he makes the picture of Soviet philosophy more systematic, more coherent and more lucid than it really is. But in both his creation of a Soviet philosophy and in integration of it he has very definite ideas which he expresses most clearly. This fact partly explains the popularity of the volume and the fact that it is particularly acceptable to the unthinking mob who put Durant's Story of Philosophy among the best sellers. Like Durant's perpetration this volume is very singular because of what it neglects. But Dr. Sommerville can be envied and praised by scholastic philosophers for the lucidity with which he can present his thoughts. His clearness of language can at times be a decoy for alluring a consent to unwarranted conclusions.

The philosophical world is not as ignorant of Soviet philosophy as the author implies even though its American representatives have not had the advantages enjoyed by Dr. Sommerville within the U. S. S. R. and through its language. Neo-scholastics, the world over, know the contact of Soviet philosophy with historical and dialectical materialism and with its antecedents in Marx, Engels, Feuerbach and Hegel. Our familiarity with the roots of this growth made us so aware of the noxious plant that it was not difficult for us to label it as dangerous. No practical success of such philosophy in the laboratory of social life can blind us to the vision of its ultimate failure or to our obligation to warn men and nations against its insidious and ultimate disaster. Dr. Sommerville either accepts this philosophy or he is uncooperative in not putting his contrary convictions to work for human betterment. Communism has become a menacing and unAmerican danger to our own Republic. Our philosophers may not be justified in promoting an international war because of divergent ideologies but they can not be excused if they condone errors which are subversive of our national integrity. Our neo-scholastics, because of their familiarity with the historical antecedents of dialectical and historical materialism will be bored with Dr. Sommerville's exposition in this area.

Likewise there is nothing original in the Soviet promotion of restless discontent and class struggle except its extension as a political measure for Soviet expansion and imperialism. The fact and the brazenness of this international meddlesomeness and greed for power is something that Dr. Sommerville does not tie up with any Soviet philosophical principles. He prefers to present the possible philosophy that Russian

thinkers allege to be the source of merely approvable Soviet action. It is difficult to accept the statement that Russia is acting on a labor theory of value where labor has so little control over the means and plans of production and where the proletariat is still a proletariat far from control of government and not very far from starvation. Dr. Sommerville, has not done too well in attempting to screen a Soviet philosophy from the manner of living among the Russian masses. It seems as if their philosophers as well as their political leaders are moving on different and isolated levels. There is reason to suspect that the author found it difficult to understand the essential harmony between part of a society enslaved to thought about means of economic production and the aesthetic elite produced by materialism.

Dr. Sommerville seems to be phazed by even the attempt of Soviet philosophy to explain the emergence of the "esthetic from the grossly material." He reverts to the question of moral conduct and esthetic aspirations very often. He must be judged by what he emphasizes and by what he fails to mention in Soviet thinking and living. The worth of his book must be gauged by the absolute objectivity of a man who writes neither to praise or condemn. But praise and condemnation are indicated by silence as well as by voice and pen. And incidentally the author occasionally betrays in furtive paragraphs the lack of horror at Soviet thought and policy that made him by his own testimony, a welcome guest to politicians, scholars and peasants. The insidious furtiveness of these insipid revelations makes it difficult at times for anyone but a very analytical reader to know just where objective Soviet philosophy ends and where the author's personal attitudes are injected (p. 25). And none of these expressions of personal opinion is unfavorable to Soviet prestige. This implicit correlation of Dr. Sommerville with the basic content of Soviet philosophy does not make the author distinctive. There is such widespread affinity between the materialistic concepts of many of our American philosophers and the alleged principles that have produced Soviet life that our people at large are justified in their suspicions that our American universities are a source of great consolation to the Moscow internationalists. Nowhere is this alliance so evident as in the cowardly evasion by Soviet and their sympathetic philosophers of history and of the historical process of the eras of Catholic supremacy in ideals of progress and planned change. These can not be explained through dialectical materialism, economic motives and class struggle; therefore they are

ignored. It would be easier to excuse Dr. Sommerville of the subjective bias which he promises to avoid if, by the use of the word "*we*" he did not associate himself with such unlettered slights to the power of Theism and of Catholic action to effect social betterment.

Three striking paradoxes seem to bear on this reprehensible bias. One is the attempt of Soviet philosophy, with the help of Dr. Sommerville, to define the spiritual. The second is the recognition of the mediaeval economy (in curt mention) as a phase of historical dialectic. The third is the recognition, equally curt, of the Thomistic synthesis as a step forward in the process to dialectic materialism.

The spiritual is the esthetic and the intangible. It can by no means be associated with the supernatural or the divine. Therefore Soviet philosophy is both materialistic and spiritual but it is not theological. Medieval economy was a part of the emergence from spiritualistic superstition to the materialistic enlightenment. It was valuable but as benighted as is American democracy today. The Thomistic synthesis is admirable because Aquinas, like Aristotle, Kant and the Soviet philosophers viewed not merely a portion of reality but all the universe in every age and under all its aspects. Dr. Sommerville has succeeded, without confirmation, in allowing the Soviet thinkers to associate themselves with the master minds of history. With his clarity of expression he could have done better with the Marx, Lenin, Trotsky, Stalin and Co. misunderstanding of the dialectical and historical process (p. 40). But perhaps this would not have been objective.

Political philosophers and statesmen should be intrigued and amazed at the credentials presented through the author from Lenin and his disciples why Russia is not only a democracy but the perfect form of democracy. It is said to be "a fuller development of democracy than anything that has yet taken place in the western world" (p. 47). This adequates perfect democracy with totalitarianism. Did this fantastic philosophy of the Soviet emerge from political expediency before or after its alliance with Germany during World War II? Certainly the Soviet is not pleased with our form of democracy. In their eyes it is incomplete and will be perfect only when our democratic protection of private property rights is eradicated,—along with our other non-soviet rights and freedoms. What is the philosophy behind this squirrel cage thinking? Dr. Sommerville really does not help the great Soviet philosophy answer the question "When is a country democratic?" (p. 47).

Dr. Sommerville does an admirable service to the creation of contempt for Soviet insincerity in presenting the Soviet constitution on the rights which democracy holds sacred. In no other way could the contradiction between Soviet life and what the author dignifies by the name of Soviet philosophy be so easily discovered. He gives the official, but not practiced, Soviet constitution on freedom of education (p. 55) on race problems (p. 57) on the freedom of women and the equality of the sexes (p. 59) on political liberty, and its refusal to permit movement against the existing socialist order (p. 63). The clash of the ideas of the Soviet and the rest of mankind about liberty and right must have occurred to the Soviet politicians seeking an ingress into citadels of freedom. Dr. Sommerville implies this when he discovers Soviet Philosophy dealing with the superiority of the Soviet idea of freedom (pp. 65-88), and its relation to human rights. Nowhere is this volume so mighty in its implied condemnation of Soviet philosophy. Their understanding of freedom is not only puerile; it is at variance with any philosophical system it may be credited with. Their concept of the freedoms of speech, press, assembly and demonstrations is fictitious. Their attempt to evade the label of totalitarianism is as ludicrous as their eschewal of Fascism (p. 77). Their attempt to qualify for association with the democracies because of their support of the freedom of religion is as weird as Dr. Sommerville's failure to express an opinion about this diabolical deceit. It is not certain that he condemns or even represents objectively this absence of sound philosophy.

It will be a revelation to many that Dr. Sommerville has discovered a system of Ethics in Soviet policy and among Soviet thinkers. Is this too an instance of where reason has been compelled to slave for practices that were adopted by Soviet politicians for expediency? Other authorities, more reliable than Dr. Sommerville, know that the Soviet has one objective norm of morality,—the welfare of the State. Soviet practice in breaking treaties and slaughtering its own people indicates its fealty to such a principle. But Soviet philosophers and politicians have been able to sell Dr. Sommerville another idea about Soviet ethics.

The Soviet ethic has as its "basic criterion, a more abundant material and cultural life for all" (p. 84). The ethical teachings in Soviet philosophy are referred to, by their philosophers, as Soviet Humanism (p. 85). Gorsky, Nietzsche, and other apostles of tyranny are watching over it in the background. But whatever be its appeal to historical materialism and its profession of devotion to human betterment nothing

that Dr. Sommerville presents entitles the Soviet to a place of trust in the society of nations than that which would be accorded to a nation of pagan savagery adoring at the altar of force. The state is supreme and absolute (p. 91). The end really justifies the means (p. 95) and the spiritual is only a higher degree of the material (p. 100). A reader will be amused at the shifting pragmatic attitudes and philosophical principles about the psychology and morality of sex and of (p. 103) prostitution (p. 106). In these problems, in the light of recent Soviet policy at home, it would have been more accurate for Dr. Sommerville to have discovered that Russia is totalitarian, that the glory of the nation is the determinant of right and wrong. It would be well for him to learn now that his consultant philosophers had given him a Soviet ethics from which their totalitarian government would not allow them to differ even if they wanted to.

Some of our non-Soviet philosophers, non-scholastic, scholastic, and neo-scholastic have been concerned about the metaphysical, epistemological and psychological aspects of recent theories in esthetics. They will learn from this volume the reason for the distinction between esthetics and the philosophy of art (pp. 116-145). They will learn that "art is the reflection of reality, a reality that is largely social" (p. 117). They will learn that "literature is an imaginative form of class consciousness" and its contents are taken "from the depths of a definite class psychology" (p. 119). There is no field of philosophy in which the conflict of Soviet philosophy with non-Soviet thinking is more evident than in the field of esthetics. It is evident now that neo-scholastics can not meet the challenge of Soviet error without a thorough knowledge of social philosophy. The field of esthetics as offered to American Reds must be turned over to acquaint the artist with the nature of individual and social reality (p. 124), with the value of the great art of the past (p. 126), with the criteria of judging art (p. 131). One's impression from the very meager evidence presented by Dr. Sommerville on art and literature in the Soviet is that Soviet Russia has more emissaries than it realizes in the field of theoretical and practical esthetics in our own United States. Its propagandists among the artists, authors, and playwrights in this country have served Russia better than they have served America. Dr. Sommerville has revealed unconsciously that a tremendous task confronts philosophers here in defense of truth and Americanism.

When Dr. Sommerville presents the efforts (undocumented) of Soviet

philosophy to explain dialectical materialism in its relation to the universe he is really presenting their claims to being cosmic philosophers (p. 140). The first doubt that will occur to readers not used to this tactic of thinking is whether Soviet philosophy of the Universe has emerged from its politics or ethics or whether it has attempted to back up its pragmatic ethics and materialistic politics with a cosmic philosophy. The second question aroused is whether Soviet cosmic philosophy adds anything new to the materialistic monistic conception of the universe. Dr. Sommerville, professing a knowledge of the great philosophical systems, which he discussed with Soviet leaders of thought and action answers neither of these questions. Without a knowledge of the Russian language and without the undesirable protection of the Soviet government in a search for truth one can secure answers to these problems from an analysis of Soviet action before and with the world.

Marxism is a cosmic philosophy built around social objectives. It is wishful philosophy and not an interpretation and an application of nature and truth. So is Soviet philosophy. All that Dr. Sommerville offers (pp. 149-177) on the Soviet view of the universe (undocumented) is insufficient to set aside this conviction in the judgment of an impartial arbiter.

In his explanation of the Soviet explanation of "What Materialism Means" (p. 154 ff.) we think Dr. Somerville is at his lowest ebb of objectivity. Here (p. 154 ff.) his tacit acceptance of Soviet sophistry and his own incidental allusions confirm our suspicions that he is not entirely objective. As a matter of fact justice is not done here to the philosophical ancestors of dialectical materialism and a hundred or more better explanations of this fantastic philosophy have been given than that offered by the author in the section "Three Fundamental Laws" (pp. 163). Even without a knowledge of the Russian language and coaching from Russian scholars a better understanding of the Soviet switch on Hegel could be given by a less favored student than Dr. Sommerville.

A disciple of the *philosophia perennis* is surprised by the author's undocumented statement that Soviet philosophers know St. Thomas Aquinas' teachings and respect them as a step to the ultimate understanding of the historical process. Is there no criticism of his definite teachings on democracy, on the dignity of human personality, on the need of, and the limitations of authority? Do they know enough about Aquinas to evaluate his teachings definitely? Dr. Sommerville does

not tell us. Yet these are points of vital concern to non-Soviet philosophers not only for apologetic reasons but also because it is possible that Soviet philosophy can give us reason for new research and for further explanation and application of our basic principles. Perhaps Dr. Sommerville would have done better had he merely translated into English some of the authorities with whom he is familiar in Russian and had left the understanding and interpretation of them to us. It is fine that he does express the hope that his digest of Soviet Philosophy will be the occasion for a series of volumes on the various fields of philosophy. Our neo-scholastics must undertake this task and the advice and collaboration of Dr. Sommerville will be valuable.

What Soviet philosophy thinks about man's power to think is expressed in Chapter VI on the "Human Mind; the Dialectical Method of Thinking." Here is where Dialectical Materialism sinks to its lowest level and where Dr. Sommerville seems to offer his most furtive support. It is not really subtle to show the reasonableness of Soviet attitudes on this or any other problem by showing that some leading American philosophers have presented the same views. An accumulation of errors can not be true. An army of witnesses to an inaccuracy can not alter a fact. The chapter on the human mind as seen in Soviet philosophers is as original as their theory of dialectic. Scholastic logicians however, may be entertained for the moment by the Soviet evaluation of logic and inductive reasoning (pp. 178-213).

No one will pay serious attention to the pivotal controversies among Soviet Philosophers or to the dissemination of philosophy in the U. S. S. R. There can be no controversy about principles to which the Communist party is opposed. There can be no dissemination of philosophical literature to which the Communist party is not agreeable. If these statements are denied then it is true that because of differences of thinking within the Soviet Union there is danger of revolution. These chapters (VII and VIII) of Dr. Sommerville are absorbingly interesting and they lend belief to the secret available information that even where Russians are totalitarianly unanimous in their action they are at odds enough in their philosophy to present their total collapse as a nation.

"Soviet Philosophy" is an important book. It is regretful that Dr. Sommerville can be given no high commendation for accuracy or scientific evaluation. Evidently he has written for the general public which is not interested in what an author does not say. This volume will be a great consolation to the pseudo-intellectuals who are looking

for a thinking background for their urges. They will think this is an accurate rationalization of their determination to advance the cause of democracy through radical measures. Others will think they have a deep understanding of the secret of real world progress when they get "Soviet Philosophy." It is a volume to which we are indebted for the memories of past errors which it recalls.

IGNATIUS SMITH, O.P.

Physics and Philosophy. By JAMES A. MCWILLIAMS, S.J. Catholic University of America: American Catholic Philosophical Assn. 1945. 143 pages, $2.00.

Tremendous revolutionary changes in modern physics such as the new concept of matter as radiation or light, moving not in the absolute space and absolute time of Newton, but in a four dimensional universe, has thrust the problem of physics into the forefront of philosophical speculation. Dr. Alfred North Whitehead has argued that "a new Cosmology suggests a new religion"; Haldane has pleaded for the reign of relativity in philosophy; Sir James Jeans uses the quantum-theory to prove the freedom of the will; Eddington uses it as a springing board for affirming an intuitional knowledge as against the symbolic knowledge of science.

To many a bewildered philosopher who was anxious to know whether a new style in physics demands a new philosophy, the scholarly treatise of Dr. McWilliams comes as a most helpful and illuminating guide. His work is both a translation of St. Thomas' Commentary on the 8 books of Aristotle's physics, and his own Commentary on the same. Wisely does the author omit those passages of St. Thomas' Commentary which are antiquated with an outmoded astronomy: "There is such a welter of outmoded physical hypotheses and philosophical interpretations of them, that an indiscriminate presentation of them all, while of great interest to the historian, cannot appreciably relieve the labor of the student who is bent on the mastery of the significant content of the physics."

We learn from Dr. McWilliams that Aristotle demanded the activity of "intelligence" to account for the rotation of the outer spheres of the heavens, because they were doing the work of "pushing the planets in the lower realms." If Aristotle were alive today, and knew that astronomical bodies do not do any "work" he would have said that

they need not be pushed, and therefore have they no need of intellects to guide them. A further learned note on Aristotle's concept of the eternity of the world reveals that while Aristotle held to an eternal world, St. Thomas comes to his defense and contends that God was the cause of its existence.

The principal and vital point of the commentary is that physics is concerned with something more than just motion, namely material, formal, final and efficient causes. Without a study of these proximate causes it is impossible to have an intelligible science. Modern physics would retort that every mathematical pattern is a *datum*, and there is no particular reason why this pattern should be taken than any other. It is just this inconsistency that the physics of Aristotle and St. Thomas would correct, asking: "Is it rational to ignore the total pattern, and must it ever be ignored?" Further why does a particular configuration exist, what is its relationship to other patterns? Abstractions may be made from these questions by limiting oneself to the mathematical correlation of events, but there is no full explanation given of physical reality until these questions are answered in terms of the 4 causes.

Though Dr. McWilliams does not venture into the field of contemporary physics which he knows so well, it is evident from his commentary that his critique of it would be its insufficiency. He would contend that the expelling of purpose from the equations of the physical theory do not mean the expelling of purpose from the universe. The very search for the togetherness of the universe which Whitehead calls organic may be after all nothing but his quest for that formal causality so much insisted on in the physics of St. Thomas. In this connection, it is most interesting to read the scholarly work of Dr. McWilliams in conjunction with *Science and the Idea of God* by William Earnest Hocking, the last chapter of which argues to the necessity of a philosophy to complement the inadequacies of physics. As Dr. Hocking puts it; "There are two ways of taking the universe, as a subjective enjoyment, and as a summons to think." Modern physics with its subjective and relative symbols takes the first way, St. Thomas the second.

Another merit of the treatise is that it supplies an answer to Mortimer Adler's attack upon the five ways of St. Thomas. St. Thomas revealed in his Physics, that the motion of which he speaks is not experimental or sensible motion, but metaphysical motion: Motus est actus *existentis* in potentia secundum quod hujusmodi. Here he breaks with Aristotle who defines motion as Actus *Entis*, and thereby left the existential

nature of motion in doubt. It is the position of St. Thomas, as the author reveals, that everything that physics can assert is about reality; not abstract forms. Every true predicate about an existential; every measurement, every hypothesis, every conclusion is about existence; every time we say that we know, somehow or other we know existence. If scientific knowledge exceeded what the thing is, even faintly, it would be falsity and not knowledge. There is no appearance apart from existence. If modern physics discusses those things which have only a feeble existence, then it gives us little science. "Each thing is knowable to the extent that it is an actual existant; hence things which have a deficient and imperfect existence, as matter, motion and time, can of themselves give us but little knowledge."

In this position of St. Thomas and its excellent elaboration by Dr. McWilliams is the germ of the refutation of the idealism of modern science. The latter has become idealistic for the same reason that Plato was; it deals with abstract mathematical forms. The treatise also shows the fallacy of the position of Dr. Whitehead that a new Cosmology demands a new religion, for St. Thomas has always taken great pains to point out that there is no uniform method of science, and that the predicates and catagories of the empirical order are not transferrable to the metaphysical order except analogically. Dr. McWilliams has whetted our appetite for a further treatise in which he will apply the principles of the physics of Aristotle and St. Thomas to contemporary science. Only one who has done a work such as this could adequately do the other.

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